PLAIN and FULL

INSTRUCTIONS

To raiſe all ſorts of

FRUIT-TREES

That proſper in

ENGLAND;

In that Method and Order, that every thing muſt be done in, to give all the advantage, may be, to every Tree as it is riſing from its Seed, till it come to its full growth.

TOGETHER

With all neceſſary directions about thoſe ſeveral ways of making *Plantations*, either of *Wall-Fruit*, or *Dwarf-trees* in *Gardens*, or large *Standard-trees* in *Orchards* or *Fields*.

TOUCHING

Which laſt, becauſe it's ſo vaſt an Improvement of Land, all the profitable and practical ways are here directed to with all exactneſs.

AND

In the laſt place the beſt directions are given for making *liquors* of the ſeveral ſorts of *Fruit*.

By *T. LANGFORD*, Gent.

LONDON,
Printed by *J.M.* for *Rich. Chiſwel* at the *Roſe* and *Crown* in St *Paul*'s *Church-Yard*, 1681.

BIBLIOTHECA BODLEIANA

TO THE READER.

I Would not hinder any man ſo long from the Book it ſelf, as he muſt be in the reading this Preface, *if I had nothing to ſay for it, but that I would not be taken notice of to break an old Cuſtom, or that I would pre-engage the Readers favour, of which I think there will be no need: Yet I would not have him come with prejudice, and therefore this little ſtop is given him at ſetting out.*

If the obſcurity of the Author ſhall frighten any Man, that takes this Book up in his hands, I ſcarce look he ſhould read over the Title before he reject it; but then he muſt be content to be told the truth, that he doth not do well in it,

becauſe he doth he knows not what, and may do himſelf a greater diſcourteſie than he is aware.

I think there are few Books of this kind extant, and of note, but I have read them, and been the better for it, and named ſome of them ſometimes in what follows, and will not detract from them any further, than to ſay, I ſee no reaſon why for any of them, or all of them together, this may not be acceptable, but much reaſon why it ſhould; and that's the chief thing I deſire the Reader may underſtand.

I am not ſo fondly conceited of what I have here done, as to think there may not be ſome that may know as much as is here ſaid of Planting without my telling them; but they muſt then know more than is to be found in Books already; and I fancy too, ſome (even amongſt them) may meet with ſome things here of uſe, that they may never have taken notice of any where elſe, though the tract be calculated

chiefly

chiefly for young beginners, and ſuch as are unperfect.

I ſhould not mention the convenience of the ſmalneſs of the Volume, *being thereby the more cheap and profitable, and ſo of readier uſe; but that it may be noted, that ſome of the moſt excellent Books of this kind are in* folio, *and therefore both dear and tedious: There are others indeed not much bigger than this, but the one half of them, and ſometimes more, rather an hinderance than a furtherance to a man that would ſet himſelf to work by them; for the Rules and Directions he is then to go by, are almoſt loſt and ſmothered among* Moral, Myſtical, *and* Philoſophical Diſcourſes, Quotations, *and ſometimes* Whimſies, Crotchets, *and* Legendary Tales, *ſo that he that enquires into them finds himſelf in a* wood *before ever he hath raiſed one* Tree: *And yet it ſeems moſt of theſe Writers could not for their hearts forbear, (for ſome opi-*

nion of fineneſs and gayety in them) but out they muſt come; and they did not amiſs, if they intended their Books only for the delight of reading; but certainly unadviſedly, if they deſigned them only for uſe.

I have therefore pruned off all ſuch ſuperfluous branches, and here ſhewed the plain Dunſtable *way to the propagating of all manner of* Fruit-trees, *without leading the learner through* buſhes, *and a* wilderneſs *of Words, to tire and loſe himſelf with a little diverſion.*

I have been long acquainted with raiſing Fruit-trees, *and I think have left out nothing conducible to this end, that is any where elſe to be met with, and have added much more, and yet nothing but what is neceſſary to carry on this Art further, if not fully to perfection; having had it all along in my deſign, to guide the Planter in every the moſt* minute *particular, and in that* order, *that if he ſhould have ſome*

old

old experienced Maſter always at his Elbow when any thing is to be done, he could not do it better, and be leſs at a loſs.

And I verily believe, nothing hath hindred Planting more among us than this, That Books are no more curious to acquaint People in every circumſtance that is needful to a due conduct of this buſineſs; and therefore for want of ſome ſlight obſervations in appearance, but of great conſequence in reality, ſome very much diſpoſed this way, meeting with unexpected and frequent diſappointments, have knock't off before they have well begun, and then fallen to thinking that the vaſt improvement of Land by Planting, is but ſuch a kind of talk, as that of the Philoſophers Stone, goodly Words but no Wooll.

The manner of expreſſion I have uſed is plain, I have abſtained carefully from all hard words, as judging it to

much more purpoſe to be underſtood by a Plow-man, than commended by a Scholar.

And ſo I have ſaid what I here deſigned, and ſhall ſay no more, but that if this be not enough to diſpoſe him that knows of it, to read this Book, it will be to as little purpoſe to ſay ten times more. Farewel.

T. L.

Mr.

Mr *Chiſwel*,

I Have read the *Treatiſe* of *Fruit-trees*, *&c.* which you lately put into my hand, and find the intire Myſtery ſo generouſly diſcover'd from its very Rudiments, to its full perfection; that (with the ingenious and experienced *Author*) as I know of nothing extant which exceeds it, ſo nor do I of any thing which needs be added to it. The *Gentleman* will by this free communication much oblige the whole Nation, and therefore needs not the ſuffrage of

Your humble Servant,

J. EVELYN.

THE

THE CONTENTS.

The INTRODUCTION.

Shewing the reaſon why a Planter ſhould have a Nurſery of his own.

CHAP. I.

Of the Seminary.

Sect. 1. *How the ground is to be ordered for the Seminary.*
Sect. 2. *How Stones are to be ſet.*
Sect. 3. *Of ſetting Nuts.*
Sect. 4. *How the ſowing of Seeds is to be ordered.*
Sect. 5. *How to ſecure what's ſet or ſown from prejudice.*
Sect. 6. *How to order theſe Plants when they are come up.*
Sect. 7. *What kind of Stones and Seeds are to be ſet and ſown to make proper Stocks for all kind of Fruit.*
Sect. 8. *Other ways of raiſing Stocks.*

CHAP.

CHAP. II.

Obſervations concerning the raiſing of Stocks in the Seminary or elſewhere.

Sect. 1. *Seeds and Stones produce not Trees that without graffing, &c. will bear the ſame Fruit as that out of which they were taken.*

Sect. 2. *Concerning Stocks for Peaches, Apricocks, Nectarines, and Plums.*

Sect. 3. *Of Stocks for Cherry-trees.*

Sect. 4. *The Cyen that is graffed, &c. muſt have ſome agreement in nature with the Stock.*

Sect. 5. *Stocks may contribute ſomething to the bettering of the Fruit.*

Sect. 6. *That Crab-kernels yield beſt Stocks for Orchards and Fields, yet Apple-kernels are of ſpecial uſe.*

Sect. 7. *A Diſcourſe of the ſympathy betwixt the pith of a Tree and the kernels of its Fruits.*

CHAP. III.

Of Tranſplanting the Seedlings.

Sect. 1. *Of what growth the Seedlings muſt be before they are removed into the Nurſery,*

ſery, and how the ſoil for theſe muſt be ordered.

Sect. 2. *In what Order and Manner they are to be ſet at this removal, and how to be ordered.*

Sect. 3. *Some difference to be obſerved about Stocks to be ſet in Fields, and how all thoſe young Stocks are to be dreſſed up.*

CHAP. IV.

Of Inoculating.

Sect. 1. *The way of Inoculating deſcribed.*

Sect. 2. *Of the different ways of Inoculating.*

CHAP. V.

Obſervations concerning Inoculating.

Sect. 1. *Several neceſſary things to be obſerved about Inoculating.*

Sect. 2. *How high above ground the Stocks are to be Inoculated.*

Sect. 3. *Of buds that are to be inoculated, and when Inoculation is to be uſed rather than Graffing.*

Sect. 4. *Reaſons why Inoculating is to be preferred before Graffing, where it may be uſed.*

Sect. 5.

Sect. 5. *What time of the day is beſt for Inoculating.*

CHAP. VI.

Of the ſeveral ways of Graffing.

Sect. 1. *Of Slicing or Packing.*
Sect. 2. *Of Graffing in the bark, and the reaſon why theſe two are the beſt ways of graffing.*
Sect. 3. *Of Whip-graffing.*
Sect. 4. *Of Side-graffing.*
Sect. 5. *Of Graffing in the Cleft.*
Sect. 6. *Of Graffing by Approach.*

CHAP. VII.

Obſervations concerning Graffing.

Sect. 1. *What bigneſs Stocks are to be of at Graffing.*
Sect. 2. *About the choice of Cyens, or Graffs.*
Sect. 3. *Of the time of Graffing.*
Sect. 4. *Of cutting of Graffs, and ordering them before graffing.*
Sect. 5. *About the joint in a Graff or Cyen, and how high Stocks are to be graffed above ground.*
Sect. 6. *What courſe may be taken to know readily,*

readily of what kind every Tree is.

CHAP. VIII.

Of Planting Wall-fruit.

Sect. 1. *The beſt time to remove young Trees after graffing and inoculating.*
Sect. 2. *Of preparing the ground for Wall-fruit, and what diſtance is to be obſerved in ſetting ſuch Trees.*
Sect. 3. *How to temper the Soil for them, and to ſettle their roots in the holes they are to be ſet in.*
Sect. 4. *How to order a Tree in ſpreading it upon a Wall.*
Sect. 5. *The roots are ſometimes to be bared, and the ſoil about them recruited.*
Sect. 6. *How the ſoil for theſe, or other Trees is to be amended.*
Sect. 7. *How to renew old Trees.*
Sect. 8. *Directions what Walls are proper for each kind of Fruit.*
Sect. 9. *Inſtructions about making the Wall.*

CHAP. IX.

Concerning Dwarf-trees.

Sect. 1. *The advantage of Dwarf-trees.*

Sect. 2.

Sect. 2. *Stocks for Dwarf-Pear-Trees.*
Sect. 3. *What Stocks are beſt for Dwarf-Apple-trees.*
Sect. 4. *What things are to be obſerved in getting and ordering Cuttings that are to be ſet for Stocks.*
Sect. 5. *How they may be helped to roots by Circumpoſition.*
Sect. 6. *Other ways to raiſe Stocks for Dwarf-trees.*
Sect. 7. *Of raiſing them of Suckers.*
Sect. 8. *How to raiſe Stocks for Cherries and Plums.*
Sect. 9. *How to order the heads of Dwarf-trees.*
Sect. 10. *Codling-hedges and Trees may be raiſed from the Cuttings only of ſuch Trees whoſe Cuttings will grow.*
Codlings and Moils may be graffed on Crabſtocks.

CHAP. X.

Of Planting an Orchard.

Sect. 1. *How to chooſe ground for an Orchard.*
Sect. 2. *Directions how to qualifie that ground when it is not of it ſelf (as divers ways it may not be) fit for Planting.*
Sect. 3. *How an uneven ground is to be ordered in Planting.* Sect. 4.

Sect. 4. *The time and manner of ordering Trees in planting an Orchard.*
Sect. 5. *How long they may remain in the Nurſery after Graffing before they are tranſplanted.*
Sect. 6. *Of the diſtance theſe Trees ought to be ſet at one from another.*
Sect. 7. *Whether old Trees or young are fitter to be tranſplanted, and how to order old ones at ſuch a time.*
Sect. 8. *What order theſe Trees are to be ſet in.*
Sect. 9. *Concerning the fence for an Orchard.*
Sect. 10. *Concerning Pruning of Orchard-trees.*
Sect. 11. *The ſoil about their roots muſt ever after be kept in good heart.*

CHAP. XI.

Of Planting in Fields.

Sect. 1. *Exceptions againſt Planting in Fields anſwered.*
Sect. 2. *Reaſons to ſhew it's profitable to plant Pear-trees in Fields.*
Sect. 3. *Seven ways,*
The firſt, *By planting in whole Fields.*
Sect. 4. A ſecond *way of planting in Fields, where an account is given how ſuch Trees may beſt be fenced.*

Sect. 5. The Third, *By doing it near Hedges.*
The Advantages.
The Diſtance.
Where not good.
Sect. 6. The Fourth, *In Hedges.*
Sect. 7. The Fifth, *By Cuttings.*
Of choice, and ordering them for that purpoſe.
Sect. 8. The Sixth, *By long Crab-ſtocks.*
Advantage.
Diſadvantages.
Sect. 9. The Seventh, *By Graffing old Crab-trees.*
Directions therein.
Of doing it in the Cleft or Bark, with ſome difference from graffing ſmall Stocks in the bark.
Directions to prevent the breaking out of the Cyens;
And for pruning the bodies.

CHAP. XII.

Of the Annoyances about Fruit-trees.

Sect. 1. *To prevent Moſs and Canker,* &c.
Sect. 2. *To preſerve Trees from Hares, or Rabbets.*
Sect. 3. *Againſt Ants, or Piſmires.*
Sect. 4. *Of Moles, Water-rats, Snakes, and Emets or Askers.*

Sect. 5. *To prevent Blaſting, Caterpillers, Snails,* &c.

CHAP. XIII.

Some particulars about raiſing ſome kinds of Fruit-trees.

Sect. 1. *Directions about planting Vines.*
Sect. 2. *Of the Soil and manner of propagating them and renewing old Vines.*
Sect. 3. *Of Pruning them.*
Sect. 4. *Concerning Vineyards.*
Sect. 5. *Of planting Fig-trees.*
Sect. 6. *Of raiſing Quince-trees.*
Sect. 7. *Of propagating the Medlar and Service-tree.*
Sect. 8. *Of Walnut-trees.*
Sect. 9. *Of raiſing Gooſberries, Currans, Barberries, and Raſberries.*

CHAP. XIV.

Of the ſeveral kinds of Fruits.

Sect. 1. *That it's convenient to have variety of Fruit.*
Sect. 2. *Of ſeveral ſorts of Peaches.*
Sect. 3. *Of Nectarines.*
Sect. 4. *Of Apricocks.*
Sect. 5. *Of Plums.*

Sect. 6. *Of Cherries.*
Sect. 7. *Of Grapes.*
Sect. 8. *Of Pears.*
Sect. 9. *Of Apples.*
Sect. 10. *Of Quinces.*
Sect. 11. *Of Walnuts, Cheſnuts, Filbeards,* &c.
Sect 12. *Of Figs, Medlars, and Services.*
Sect. 13. *Of Mulberries, Goosberries, Currans, Rasberries and Barberries.*

CHAP. XV.

Of gathering Fruit, and making ſeveral ſorts of liquors.

Sect. 1. *Of gathering Fruit and ordering them in keeping.*
Sect. 2. *Of a Ladder.*
Sect. 3. *Of a Mill.*
Sect. 4. *Of Cyder.*
Sect. 5. *Of Perry.*
Sect. 6. *Of Rasberry Wine.*
Sect. 7. *Of Curran Wine.*
Sect. 8. *Of Goosberry Wine.*
Sect. 9. *Another way to make any of the three laſt ſorts of Wine, and Cherry.*
Sect. 10. *Cherry and Goosberry Brandy.*
The Concluſion.

THE INTRODUCTION.

HAving undertaken in this *Book* to publiſh all neceſſary Directions concerning *Planting*, the firſt ſtep I am to take, (to proceed in due *order*) is to give inſtructions about *Seminaries*, and *Nurſeries*, wherein young *Plants* are to be raiſed and cheriſhed in their Infancy.

And becauſe Men are generally (through ignorance) ſo indifferent whether they have theſe of their own or no; becauſe for a little mony they can have *Plants* from others ready brought up to their hands; therefore I ſhall here in the firſt place preſent ſuch with reaſons, that I ſuppoſe cannot but make them of the ſame mind, that I am my ſelf, That it's far better to have them of their own bringing up, and to have *Seminaries* and *Nurſeries* of their own for this purpoſe.

1. Becauſe this way a Man ſhall be ſure to meet with no failure, either in the kind or goodneſs of his *Trees*, and *Fruit*; in both which he ſhall be often diſap-

pointed, if he have his *Trees* upon *truſt* from others, who make a *Trade* of ſelling them, and are therefore many times incurious in *raiſing* them, and inſtead of the *right* kind (if they can get any thing by it) will not ſtick to put him off with *another*.

2. The *trouble* and *expence* of buying *young Plants*, and getting them home, (many times from places very *remote*) and the *prejudice* they often receive in the *carriage* will be wholly prevented.

3. This way a man ſhall with almoſt the ſame labour and charge, both furniſh himſelf ſufficiently, and have ſo many more as to defray the charge he may be at about it, if he will ſell them, or to gratify his Friends if he had rather beſtow them.

4. He will this way be provided with *Stocks* for *Apples*, *Pears*, *Plums*, *Cherries*, and all choice *Wall-fruit* raiſed from *Kernels* and *Stones* of *Fruit:* which are incomparably better than Stocks procured any other way.

The means ſome uſe to furniſh themſelves with *Stocks* for *Apple-trees* is, by getting young *Crab-trees* out of *Hedges*, *rough Grounds* and *Woods*; and with *Stocks* for *Pears*, *Plums*, and *Cherries* by *Suckers*

Suckers ſpringing from the Roots of old *Trees* of thoſe kinds; but there is much to be ſaid againſt both courſes.

Againſt uſing thoſe *Crab-trees* got out of *Woods*, *&c.* there lie theſe Objections.

1. The workmen in getting them break ſome, and hurt others of the principal Roots; and it ſometimes falls out that they have been cut down, and ſprung up again out of the remaining *ſtump*, or otherwiſe hurt, which though not eaſily diſcerned becauſe skinned over, yet will be a prejudice to them for ever.

2. Many of the *Stocks* ſo got out of *Woods*, and *Hedges*, have for want of room, and by reaſon of ſhades, and the dropping of other trees about them, been check't and baffled in their growth, and ſo become crooked, ſcabby, ill grown, rough, and unkindly, and never like to make good *Trees*.

3. Some that furniſh themſelves this way with *Stocks*, chooſe ſuch as are *largeſt*, and thoſe having for the moſt part thick and hard *bark*, and old *roots*, come on but ſlowly when they are removed to make *Apple-trees*.

4. If theſe *Stocks* be not *graffed* very low (and if they are, a years growth or two will be loſt) they will put forth

branches of their own every year in ſuch abundance that without conſtant pruning of them off, the *graffs* will be in danger of being ſtarved.

5. A better advantage may be made of *Crab-trees* in Hedg-rows and rough grounds, by graffing them where they are, (as you ſhall be hereafter directed) where they will thrive better.

There is but one ſcruple, (that I can foreſee) that can here be ſtarted; and that is, that a man cannot be furniſhed with *Trees* of a good largeneſs to bear ſo ſoon by *ſtocks* raiſed by *Kernels* and *Stones*, as by either thoſe gotten out of *Woods*, *&c.* or thoſe raiſed by *Suckers*, that may be of ſeveral years growth before they are made uſe of.

To this I anſwer, That if at the ſame time that you get *Crab-tree-ſtocks*, (of ſix or ſeven years growth) out of the *Wood*, or *Suckers*, and ſet them in order to be *graffed*, you ſow *Kernels* and *Stones*, the Stocks and Suckers you ſo graff, for ſix or eight years may continue larger and bigger than the *Trees* that come of *Kernels* and *Stones*; but yet theſe leſſer *Trees* ſhall ſo get ground of the other, that by the *tenth* or *twelfth* year they ſhall have overtaken them.

And

And as to the way of raiſing *Stocks* for *Pears*, *Plums*, and *Cherries* by *ſuckers*, it is to be noted, that Trees ſo raiſed will be ever apt to caſt up ſuch *Suckers* themſelves; and ſuch as do, are ſeldom found to be good bearing *Trees*, by reaſon they expend their *Sap* ſo much that way.

Nevertheleſs they may be uſeful for *Wall-fruit* and *Dwarf-trees*, as you will ſee hereafter in a peculiar Chapter.

And laſtly againſt both theſe ways of furniſhing a mans ſelf with the aforemention'd *Stocks* there is this to be ſaid, That a man ſhall very difficultly ſtore himſelf with as many as he may deſire, and many of them will prove bad and miſcarry, whereas from *Kernels* its almoſt the ſame labour to have thouſands as hundreds, and ſuch as will almoſt all of them be fit for uſe.

Having thus given reaſons from certain experience, why a *Planter* ought to have a *Nurſery* and *Seminary* of his own, I ſhall proceed to direct how to order them, and thence take my firſt riſe, from whence the *Planter* is to take his.

CHAP. I.

Of the Seminary.

Of ordering the Ground.

SECT. 1. Againſt the beginning of *October* prepare Ground by digging and cleanſing it from *weeds* and *roots*, making the *mold* very fine, chooſe not a *wet* or very *ſtiff Clay-land*, nor over *rich* with *Dung*, but ſuch as being of it ſelf good, you may make better only with a little mixture of very *rotten dung*, let it be fenced from the cold, as well as you can, ſo that it be free from ſhade, and droppings of Trees.

Of ſetting Stones.

Sect. 2. When you ſet *Stones*, (which if they be *Stones* of Fruit ſoon ripe, you muſt keep in ſand till *October*) do it by a Line, pricking holes about a hands breadth diſtance one from another, and then put in the *Stones*, about three inches deep with the ſharp end uppermoſt; when one *row* is finiſhed remove your Line a *foot* further, and ſet another *row* in the ſame manner; but let your third *row* be about *two foot* diſtant from the *ſecond*, that you may have liberty to go betwixt every *two rows* to weed, *&c.* and

ſo

ſo proceed to ſet as many as you have a mind; poſſibly ſome of theſe Stones may not come up till the ſecond ſpring after they are ſet, and may not deceive you if you then expect them.

Sect. 3. After the ſame manner you are to ſet all kind of *Nuts:* but becauſe it's neceſſary that your young *Walnut-trees* and *Cheſnut-trees* ſhould grow longer in your Seed-plot than *Stone-fruit*, before they will be fit to be removed to the place they are to ſpend their lives in, you muſt ſet them at much further diſtance, that they may have more room to grow big without hurting one another. *Of ſetting Nuts.*

Sect. 4. To raiſe *Stocks* from *Seeds* or *Kernels* of *Apples*, or *Crabs*, (each of which ſorts are to be ſowed by themſelves) you muſt thus go to work. *Of ſowing Seeds.*

When either you, or any Neighbour hath made *Cyder*, *Verjuice*, or *Perry*, take the *Muſt* (or as ſome call it the *Pouz*) which is the ſubſtance of the *Fruit* after the *juice* is preſſed out, the ſame day or the next day after, before it heats, and with a *riddle* ſift out the Seeds on a clean floor or cloth, and theſe you muſt ſow (as ſoon as you can conveniently) upon beds of very fine Earth, very thick, for

ſome being bruiſed in the grinding, or pounding the *Fruit*, and others, not being ripe, many never come up; then ſift *mold* upon them about *two* fingers breadth in thickneſs: this way is much better than to ſow the *Seeds* with the *Muſt* or *Pouz* together, (as ſome do) becauſe the *Muſt* will heat them, and many of the Seeds will *putrify*, and others will not be able to *root*, or *ſhoot up*, becauſe they are ſo impriſon'd in that dry and tough ſtuff clinging about them.

The *beds* of Earth you ſow them on may be made about *two foot* in breadth, with a good diſtance between the *beds*, that you may the better come at to *weed* them, and *draw* them up as you have occaſion.

Of ſecuring them from prejudice.

Sect. 5. To keep *Fowls* or *Birds* from ſcraping them up, lay ſome *white-thorn* on the *beds* till the Ground be well ſetled.

Some cover the *beds* with *Fearn* or *Straw* to keep them warm in the Winter, which may not do amiſs; but then it ought to be taken off when the Spring approacheth.

If *Moles* or *Mice* get in, (which you will diſcover eaſily, (the Mice leaving ſhells of the Seeds on the top of the *beds*) they muſt be deſtroyed. For *Mice* there-

therefore lay Poyſon, or Oatmeal mixt with pounded Glaſs, and Butter, and caſt bits of it upon the *beds:* or ſet *traps* for the *Mice* and *Moles*, better known than deſcribed.

Sect. 6. The next ſpring you will ſee theſe *Stones* and *Seeds* come up plentifully; firſt the diſſimilar leaves, almoſt of the ſhape of the Kernel ſplit in two, and from betwixt them will the ſtem put forth; keep them clean from *weeds* all the year, which muſt be plucked up while they are young, leſt if they get *root*, in drawing them up you root up the *ſeedlings* with them. *Ordering Plants.*

Theſe *weeds* and ſuch as are pluckt up any where elſe, thrown up into a heap will rot, and become very good Manure, but this ſhould be before they are *ſeeded*, for then the Manure made of them will be apt to make the ground it is caſt upon more ſubject to *weeds*.

If a *dry time* happen, you may ſometimes in the Summer water the *beds*.

Sect. 7. To furniſh your ſelf with a competent variety of *Stocks* for the ſeveral ſorts of *Fruit-trees*, your *Seminary* is to be ſtored with theſe following; ſuch as come of *Peach-ſtones*, *Plum-ſtones*, *Cherry-ſtones*, *Apple-kernels*, *Crab-kernels*, and *The proper Seeds for Stocks.*

and *Pear-kernels*; and from *Nuts* you raiſe your *Nut-trees.*

Peach-ſtones are to yield you *Stocks* for *Peaches* and *Nectarines*; *Plum-ſtones*, *Stocks* for *Peaches*, *Nectarines*, *Apricocks*, and *Plums*; *Cherry-ſtones*, *Stocks* for *Cherries*; *Seeds* of *Apples* and *Crabs* produce *Stocks* for *Apple-trees*; and laſtly the *Seeds* of *Pears* yield *Stocks* for *Pear-trees.*

Other ways to raiſe Stocks.

Sect. 8. There are likewiſe ſome other ways to be furniſhed with *Stocks*, and which you ſhall find hereafter are in ſome caſes to be made uſe of, that is, for *Pears*, *Plums*, and *Cherries* by *Suckers* ſpringing out of the *roots* of Trees of the ſame kind, and for ſeveral ſorts of *Apples* and *Pears* by Cuttings of *Apple-trees* and *Quince-trees:* which I here intimate, becauſe *Stocks* thus raiſed are ſometimes brought up in Nurſeries; but the full directions about them are given in the Chapter of *Dwarf-trees.*

Mr. *Evelyn* ſaith, the *ends* of *roots* that are cut off from *young trees*, taken up to be Tranſplanted, and ſet in *beds* of good Earth, will ſhoot forth tops, and become good *Stocks.* Such may ſerve for *Dwarf-trees*, or for *Walls.*

And I have heard an Ingenious perſon ſpeak

ſpeak of *inoculating Buds* on the ſmall *roots* of great *trees* that grow at furtheſt diſtance from the bodies, and after a years growth to cut off the *root*, about a foot in length, with the new *ſhoot* growing upon it, and Tranſplant it; becauſe a Tree will be ſooner raiſed thus than from a *Seed* or *Stone*.

In caſe of an exigent for a *Stock* or two, this way may be practiſed, but it would be found too troubleſome for general uſe.

CHAP. II.

Obſervations concerning the raiſing of Stocks in the Seminary, or elſewhere.

SECT. 1. *Seeds* or *Stones* of *Fruits* gathered from *Trees* that have been *graffed* or *inoculated* on *Stocks* of different kinds from the Cyens, produce of themſelves, (not being *graffed* or *inoculated*) not the ſame *Fruit* as that was from whence the *Seed* or *Stone* came, but a different, and moſt commonly a worſe. *Seeds produce not their own Fruit.*

The *Stones* of *Peaches* produce *Trees* that

that will bear *Peaches*, ſometimes better than the Peaches out of which the Stones were taken, although thoſe *Peaches* grew upon a Tree that was *inoculated* on a *Plum*: And therefore ſome Gardiners by ſetting many Stones of the *Newington Peach*, have found ſome among the Trees come up from them, to bear a *fruit* rather improved than worſe; and by giving it a new Name, and *inoculating* from it, have made good gain of it. But this is not a practice for every private perſon; becauſe *Peach-trees* ſo raiſed, will be longer before they bear *fruit*, than thoſe which are *inoculated*; and becauſe he muſt run the hazard of filling great part of his *wall* with theſe *Peach-trees* thus raiſed from *Stones*, and not one it may be in many prove any thing extraordinary, and the reſt of no uſe unleſs for Stocks, after he hath waited ſeveral years to ſee what Fruit they will bear.

Stocks for Apricocks, Nectarines, and Plums.

Sect. 2. It is controverted amongſt men of this *Profeſſion*, whether *Stocks* from *Peach-ſtones* are beſt to *inoculate Peaches* upon: both ſides have their peculiar advantages, which I ſhall here ſet down, and leave every man to his choice.

Stocks

Stocks from *Peach-ſtones* will be ſooner ready to *inoculate*, and the buds will take very ſure, that are *inoculated* into them; but they muſt be carefully and tenderly uſed in the removal, and muſt not be expected to make long laſting Trees.

Stocks from *Plum-ſtones* and *budded* with a *Peach* will make a more firm and laſting *Peach-tree*; and ſuch as will bear Fruit well.

Therefore rather raiſe *Stocks* for *Peaches*, *Nectarines*, *Apricocks*, and *Plums* from *Stones* of the *Wheat-plum*, which is a *White-plum* ripe in *Auguſt* (if you can have them,) or in want of them from the *Stones* of the *White-pear-plum*, which is generally commended and uſed, or of other good *White-plum*, whoſe Tree puts forth large *ſhoots* or *branches*. If you are not ſufficiently furniſhed with *Stones* of theſe *White-plums*, you may for *Apricocks* and *Plums* raiſe *Stocks* from the *Stones* of the *Muſcle-plum*, the *Black-pear-plum*, *Primordian*, or any other *Black* or *Red-plum* of free growth.

And it's a way much commended, firſt to *inoculate* an *Apricock* very low on ſuch *Plum-ſtocks*, and then after a years growth, *inoculate* a *Peach* or a *Nectarine* on

on it; only this way there will be two years loſs of time, and take notice that the *Red-Roman-Nectarine* will hardly take on a *Plum-ſtock* any other way.

The Suckers likewiſe from the *roots* of the *Wheat-plum* before mentioned make excellent *Stocks* for the *Fruit* ſpoken of in this *Section.*

Cherry Stocks.

Sect. 3. Stocks for *Cherry-trees* are raiſed from *Cherry-ſtones*, ſet or ſowed, or young wild *Cherry-trees* got out of *Woods, &c.* or *Suckers* from the common harſh *red Cherry.* The wild *Stocks* make large handſome *Standard-trees*, but though *graffed* with a good kind, do not bear *Fruit* ſo plentifully as the *Suckers* of the *red* being *graffed* do, which laſt alſo are fitteſt to *graff Cherries* on for *Wall* or *Dwarf-trees* being of much ſmaller growth than thoſe of the *wild kind* are.

Cyen and Stock muſt agree.

Sect. 4. It's plain all *Stocks* and *Cyens* (that proſper when they are joyned together) are *congenerous*, and related in ſome degree of affinity; I have tryed a *Nectarine* on a *Horſe-plum* and it fail'd; on the very ſame *Stock* an *Apricock* grew very faſt. I have alſo *inoculated* an *Apricock* on a courſe *Black-plum* (known in ſome Countries by the name of the *Lam-*

mas-

mas-plum) and it took well, and bore a good Fruit. I have *inoculated Pears* upon a *Hawthorn* or *White-thorn*, and it hath taken very well, but the growth was ſo ſmall, it's not worth the practice. A *Pear graffed* on a *Wicky-berry-tree* grew very well, but on the *Hazel* or *Nut-tree* it fail'd. I have tryed the *inoculating buds* of *Walnut-trees* upon *Aſh-trees* to haſten the raiſing Trees, but not one of many (that I tryed) came to any thing. Mr. *Evelyn* reports it from one, that ſaid, he had it to ſhew, that a *white Apple graffed* upon an *Elme* did grow and bear a *red Apple.*

Cherries graffed on *Plum-trees* will not proſper long, nor *Plums* on *Cherries*; neither do *Apples* on *Pears*, nor *Pears* upon *Apples.*

Sect. 5. It is an Aſſertion of my Lord *Bacon* in his *Natural Hiſtory, cent.* 5. *Exper.* 452. *That Graffing doth meliorate Fruit*; and I have heard that the *Golden-renating* was the *Fruit* of a *Cyen* of an *Apple-tree graffed* by his direction on an *Apple-tree*, and thence had its name as being in a manner *born again.* *Stocks may meliorate the Fruit.*

But mere *Graffing* doth not better the *Fruit* at all, as if you *graff* a *Cyen* upon the ſame Tree you took it from, the

Fruit

Fruit will be the ſame, without any the leaſt alteration from what the *Tree* bore before it was ſo *graffed.*

But it is a harder queſtion to reſolve, if you *graff* a *Cyen* on a *Stock* differing from it in kind, whether the *Fruit* of this *new Tree* will be any thing better than the *Fruit* of the *Tree* from whence the *Cyen* was taken?

This is by many held in the *negative*; becauſe (ſay they) the *Stock* only conveys food and nouriſhment to the *Cyen*, and then when the *Cyen* hath received it, it converts it perfectly into its own Nature; ſo that the Fruit which this *Cyen* ſhall bear, muſt be the very ſame that the Tree bore from which the *Cyen* was taken, and neither better nor worſe. But that the *Cyen* doth thus perfectly tranſmute the *juice* it receives from the *Stock* into its own kind is not proved, neither (as I verily believe) ever will; and it may therefore prove for all that's ſaid to the contrary, that the *Fruit* may participate ſomething of the Nature of the *Stock*, and may ſo far be made by it either better or worſe; for ſuch a union as that of the *Stock* and the *Graff* in *natural bodies* is hardly conceivable without ſome commixture of their Natures, and there

are

are ſome reaſons from Experience that make this probable, as

1. The *Seeds* of a *graffed Tree* take much after the *Stock*, and it is hard to conceive the *Kernel* ſhould participate ſo much of the *Stock*, and the *Fruit* be nothing influenced by it.

2. Thoſe that produce the beſt *Fruit* by their *Stones* or *Seeds*, yet vary from the *Fruit* the *ſeed* or *ſtone* was taken out of, which in all likelyhood proceeds from the mixture of the *quality* of the *Stock* and *Cyen* in that *Tree* the *Stone* came from.

3. It's manifeſt that amongſt *Trees* of one kind, in the ſame *Orchard*, you ſhall have ſome one of them bear better *Fruit* than any of the reſt ſometimes; and I know not what to impute this excellency to more probably, than that the *Stocks* they were *graffed* on might be *Crab-trees* that bore *Crabs* of ſeveral kinds, ſome better, ſome worſe.

So that to conclude this diſcourſe, ti cannot be amiſs to be ſo far curious about the *Stocks* you *graff*, as rather to chooſe ſuch *ſeeds* and *ſtones* to raiſe them from as come from *Trees* that bear the beſt *fruit* in their kind (if you can have them) than to take them at adventure.

Crab Kernels beſt.

Sect. 6. In raiſing *Apple-trees* for *Orchards* or *Fields*, whether for *Cyder* or *baking*, *&c.* the *Crab-kernels* are preferr'd before *Apple-kernels*, as yielding *ſtocks* more hardy, and ſo better able to endure cold and courſe Land, and becauſe they root better and ſo will make larger *Trees:* Neither are ſome ſorts of *Crabs* ſo contemptible a *fruit* as they are generally accounted; for being gathered very *ripe* and kept a good while to *mellow*, ſome of them will make good *Cyder*; and generally they yield a ſtrong Liquor: ſo that ſuch kind of *Crab-ſtocks* may rather help to mend ſome *Apples* of weak *juice* than make them worſe.

Yet where you cannot conveniently be ſtored with *Crab-kernels*; *Apple-kernels* are not ſo much inferior to them, but they may well enough be made uſe of, (as they commonly are) for raiſing *ſtocks* to *graff Apples* upon.

And concerning the *ſeeds* of *Apples* it's to be obſerved, that although they produce not *Trees* bearing the ſame kind of *Apples* as thoſe the *ſeeds* were had out of; yet without *graffing* they will bring forth a good *harſh fruit* that may yield good *Cyder*: and thus (it's ſaid) we came by ſome of our beſt *Cyder-Apples.*

If

If you ſow the *ſeeds* of ſeveral ſorts of *Apples* mixt together, you would certainly have *fruit* multiply'd into various kinds; but yet perhaps find none better for *Cyder* than thoſe already known, nor ſo good, and ſuch *Trees* will be longer before they come to bear *fruit* than others that are *graffed*: ſo that it would be but an unpleaſant Experiment to ſearch this way for a *Cyder-Apple* to exceed all that have been before, becauſe the trial would be ſo tedious, and the labour in greateſt likelyhood loſt at laſt.

But if a man had a mind to raiſe a good *new Fence* about a *field* he deſigns to incloſe, which he can keep for *four* or *five* years together to bear *Corn* or *Clover-graſs* to mow, that *Cattle* may be ſo long kept out of it, he might do it rarely well by ſowing *Apple-kernels* of as many ſorts as he will, on the top of a new made *Ditch-bank*, making the *dead Hedg* (that is uſually on the top of the bank) on the outſide of the *ditch* to defend them.

When they are grown up he may plaſh this Hedg, leaving at every four or five yards diſtance, one of the beſt Trees to grow up, which of themſelves will bear good *Cyder-fruit*, or may be *graffed* to bear what pleaſeth the owner; and by this

means in a little time and with ſmall charge he ſhall have a *fruit-bearing* and *impregnable Hedg.*

Of the Pith and Kernels.

Sect. 7. It's held by ſome, that the *Kernel* of the *fruit* hath a great dependence upon and ſympathy with the *pith* of the *Tree*, and that *hollow-trees* though they grow and bear *fruit*, yet that *fruit* hath few *kernels* in it, and thoſe little better than withered *husks.*

When I was a young *Planter*, I was once in want of *Pear-ſtocks*; and made my complaint to an ancient *practiſer*, a man of very good judgment in the opinion of thoſe that knew him, and he told me he had oft ſowed *kernels* of *Pears* and never could get any to grow: Yet I procured ſome Seeds of *Pears* from the *Mill*, that were very *ripe*, and had *ſtocks* enough from them, which makes me believe my friend took his *kernels* from a *Tree* that was *hollow-hearted*, as *Pear-trees* are more ſubject to be than any other *Fruit-trees.*

I mention this the rather, becauſe if a *Planter* try any thing but once, and fail, he ſhould not be *diſcouraged*, and particularly in this; but if he can get ripe Seeds, (which will be then very black) and of a *ſound Tree*, he need not doubt the ſucceſs. And

And to have plenty of *ſtocks* ſuch as are beſt for large *ſtandards* for *Orchards*, or *Fields*, there is no better way of raiſing them than by Kernels; with which a man can no way be plentifully and eaſily provided, but at the time and place of making *Perry*, though he do ſend ſome miles for them.

I ſhall end this *Chapter* with this one *Obſervation* more, not unſuitable to what went before, and which I have met with verify'd more than once or twice in my own Experience, That there are ſome *hollow Fruit-trees* that bear *fruit* ſo much more excellent than any of the ſame kind the owners have had, or could elſewhere meet with, that they have been very deſirous to propagate from them, but never could any manner of way raiſe young ones of thoſe old *Trees*, that would bear ſo good a *Fruit*; which ſeems to infer that the *fruit* of a *Tree* may be the *better* for the *piths* being *conſum'd*; and if that be true, it muſt be ſo, becauſe the *pith* conveys to the *fruit* a *worſe* ſort of *juice* than any other part of the Tree doth, and therefore being freed from that infection by the *Conſumption* of the *Pith*, the *Fruit* becomes more *choice* and *delicate*. And that the *Pith*

is the conveyance of a *courſer*, or other ſort of *juice*, is rendred in ſome ſort probable, becauſe (as hath been before obſerved) the *Kernels* of *Fruit* depend much upon the *Pith*, which almoſt never produce ſuch *good fruit* as they come out of, and generally much worſe.

CHAP. III.

Of Tranſplanting the Seedlings.

Of removing Seedlings.

SECT. 1. In *October* after one Summers growth in the *Seed-plot*, you ought to draw up with your hand, ſuch of your *Crab*, *Apple*, or *Pear-ſeedlings* as you find grown above a foot in height: as for thoſe from *Stones* they need not be *removed*, but inoculated in the *Seminary*, the *ſtones* being ſet at the diſtance aforeſaid.

When they are drawn up, cut off the *ſide-ſpriggs* from about the *top*, and the *ſtrings* from about the *roots*, and ſnip off the *extremities*, both of the *top*, that it may not run too faſt *upward*, but the body may grow in bigneſs, and of the *tap* or *heart-root*, that it may not run directly

directly *downward* (leſt it run further than the good *ſoil*) but may be more apt to ſpread its *Roots* in breadth.

Have *beds* ready prepared, of good *fertile, dry Earth*, not over *rich*, leſt upon removal afterwards into a much worſe Soil (as for the moſt part *Orchard* and *Field* ground is) your Trees coming of a ſudden from ſuch delicate food, to ſuch courſe fare, pine away if they do not periſh; and this is but reaſonably thought to be the cauſe why many Trees bought out of *London* Nurſeries (which are vaſtly deep with *fat*, and *rich manure*) decay, or come on very poorly, when they are brought into the Country. Therefore upon every removal endeavour to have Earth as good, or better (to place next the *roots*) than that out of which they were taken.

If any of theſe ſpring *upright*, *top* them early, it will make them grow bigger *bodied*, and ſo become ſooner ready for *graffing*.

Sect. 2. Let every *bed* you make, for ſetting theſe *Plants* in, be about *two foot broad*, leaving *room* betwixt each *bed* to walk and work about them, without prejudicing the *Plants*: Set *two rows* a *foot* or more diſtant each from other *Of ſetting them.*

on every *bed*, by drawing a *line*, and pricking *holes* a full *foot* aſunder; let the *holes* be ſo deep, that if the *roots* be not very long, you may ſet your Plants at leaſt two fingers breadth deeper in the ground than they grew in the *Seed-plot*, *cloſe* the *mold* about them, and if it be a very *dry* time, *water* them the ſame day, the better to *ſettle* the Earth about them.

If you can get old *Fearn* (in ſome places call'd alſo *Brakes*) or for want of it *Straw*, or *new Dung*, cover the *Beds* with it, which will keep the *roots* warm in the *Winter*, and preſerve them from overmuch heat in the *Summer*; if the land be any whit *ſtiff*, this cover will make it *mellow*, and when *rotten* enrich it, and very much hinder the growth of *weeds*, which ought duly to be pluck't up; and put new *Fearn*, *&c.* as the old rots.

Of dreſſing them. *Sect.* 3. Thoſe of your *Plants*, which are not grown above a *foot* in height, you may let remain in your *Seed-plot* till another year.

If you intend to raiſe any *Stocks*, to be ſet out in *Fields* before they are *graffed*, you need not *top* them upon their firſt *removal*, neither need you *remove* them,

them, till they are grown *high* enough to ſtand in the *Fields*; if you find that they *ſpread* their *roots*, and run not *downward*, as in *gravelly* and ſuch kind of *ſoils* they will not be apt to do; (and by the firſt you *draw up* you may judge of the *reſt*, whether they do or no:) If you *reſerve* any for this uſe, you had beſt *chooſe* ſuch as grow *ſtraight*, and at convenient *diſtance* one from another; which you may contrive to do, in *drawing* out the *firſt two* years, ſuch as be of *ſtature* to be *Tranſplanted* from among *them*: Dreſs theſe once or twice a *year* by cutting off the *biggeſt ſide-branches* to haſten their growing *tall*, but leaving ſome ſmall *ſide-branches*, for this cauſeth them to thrive in *bigneſs* the more, which they ought to do proportionable to their height, or elſe they will be too *weak* to *bear* a *top*.

Obſerve this alſo in *graffed Trees* in your *Nurſeries* or elſewhere.

CHAP.

CHAP. IV.

Of Inoculating.

Way of Inoculating.

SECT. 1. About a fortnight before, or after *Midſummer* (which is the beſt time, though it may be done from the beginning of *May* till *Auguſt*) when you have pitch't upon ſuch *ſtocks* as are fit to be *inoculated*, chooſe out a *ſtrong* and *well liking branch*, or *ſhoot* of that *years growth* upon a Tree that bears ſuch kind of *fruit* as you would by this operation produce, and about the middle, or lower end of it, (for the top will be too tender) fix upon a *leaf*, that hath a freſh and fair *bud* growing out betwixt it and the bark, and about half an inch below, and above the *bud* cut off the *branch*, and ſo you will have a piece of it about an inch long remaining, with a *bud* and a *leaf* on; this you muſt *cleave* juſt through the midſt, ſo as the *bud* may be directly in the middle of the one half; and then ſnip off a part of the *leaf*, and holding it by the remainder, clap it to a ſmooth place on the *ſtock*; and with a Pen-knife ſcore out, on each ſide of it,

ſo

ſo much of the *ſtock* as it covers, or rather a little broader (becauſe when the *bark* on which the *bud* is, is taken off from its own *wood* and applyed to the *ſtock*, it will cover a wider ſpace of the *ſtock* than it did before;) after you have thus marked your *Stock*, withdraw the *Cyen* again, and cut the *bark* through where you had marked it, then cut the *bark croſs* and *ſtraight*, from the uppermoſt end of one *ſcore* to the upper end of the *other*, and cut the *bark* again *croſs* and *ſtraight*, from one *ſcore* to the *other*, but not ſo low as the lower ends of the *ſcores* by a quarter of an inch, then take the oblong ſquare piece of *bark*, that is cut on every ſide quite off the *Stock*, and raiſe up that part of the *bark* that remains betwixt the ſide *ſcores*, at the bottom of the work, from the *wood*, till you come to the lower ends of the ſide *ſcores*.

Take then a Gooſe-quill, cut in the faſhion of an *Apple-ſcoop*, or *Scraper*, and having with your Nail a little looſned the upper part of that *Bark* that is on the *Cyen*, thruſt the *quill* betwixt the *bark* and the *wood*, holding it cloſe to the *wood*, that it may ſeparate them, and take off with the *bark* a little *wood* or *root* of the *bud* over againſt it: If you

ſee

ſee a *hole* on the inſide over againſt the *bud*, when you have taken the *bark* off, caſt it away, that little labour is loſt, and try another till you find it otherwiſe.

Then put in the lower end of that *Bark* or *Cyen* betwixt the *bark* that was raiſed on the *Stock* and the *Wood*, and ſo bind it on the *ſtock* gently with *Woolen-yarn*, or *narrow ſhreds* of *Linnen-cloth*, or *gentle Stuff*, or with *Baſſes*, or *Baſt*, of which the *Ruſſia Mats* are made, but ſo that the *Cyen* may lye cloſe to the *wood* of the *ſtock* that was made bare, and have a ſpecial care that you hurt not the *bud*.

Several other ways.

Sect. 2. There are ſome other ways of *inoculating* uſed, differing only in the manner of the cut both in the *bark* of the *Stock*, and of the *Cyen*.

And firſt, Some proceeding in all other things as is before directed, cut the Bark out of the whole length of the ſide *ſcores*, and apply the *Cyen* to the diſbarked place.

Secondly, Others cut one ſlit only, down the *bark* of the *Stock*, and another *croſs* the top of it, like a great T: when this is done, they prepare the *Cyen* or *bark* as before directed, (only cutting it ſharp pointed at the lower end before

before they take the *bud* off its *wood*) then raiſe the *bark* of the *Stock* up on each ſide the *ſlit*, and put in the *Cyen*, beginning at the top and ſliding it downward gently, and ſo bind the Bark gently upon it. *This is the common way uſed among Gardeners.*

Thirdly, You may make the *croſs cut* in the middle of the downright *ſcore* on the *Stock*, and lifting up the four corners of the *bark*, and making the *Cyen* ſharp at both ends, put it under the *bark* of the *Stock* at both ends, and then bind it. But in doing this there is danger of hurting the *Cyen*.

Fourthly, Mr *Rea* commends the making the *croſs cut* at the lower end of the *down right cut*, and having opened the ſides, put in the *Cyen upward*, being made ſharp at the *upper end* only.

Thus much to ſatisfie the curioſity of ſuch as have a mind to make tryal of every way; but the *firſt* that I have deſcribed at large, I take to be the beſt.

CHAP.

CHAP. V.

Obſervations touching Inoculating.

Neceſſary Rules.

SECT. 1. Leſt one *bud* fail, or any miſchance break it, put *two* in every *Stock*, but not directly *under* one another, on the ſame *ſide* of the *ſtock*: The *branch* or *ſhoot*, you cut one *Cyen* off, may yield you ſeveral.

About a *month* after the *inoculating*, or ſooner, if you perceive the *bark* ſwell where the binding is, cut off the binding.

If it grow it will fix to the *ſtock*, keep its colour, and that part of the *leaf* and *ſtalk* that was left will drop off, and the *bud* appear fair; then ſometime before the next ſpring cut off the *top* of the *ſtock*, a hands breadth above the place it was *inoculated* at, and all the *ſide-branches*, that grow any where upon the *Stock*; and at Spring the *bud* will put forth, and if any other *ſprouts* or *buds* appear on the *ſtock*, cut them off.

If the firſt *inoculation* fail, or the *buds* dye, the *ſtocks* may be *inoculated* again next Summer; and of ſuch as are *inoculated*

Place this Page 30.

A *Denotes the cutting of the Bark for inoculating the firſt way directed.*

B *The upper part of the bark taken off and the lower part raiſed.*

C *The Bark prepared to put in the Stock.*

D *The firſt inoculation finiſhed.*

E *The ſecond way deſcribed by taking the Bark off the Stock in an oblong ſquare.*

F *The ſame finiſhed.*

G *The cutting the Bark of the Stock according to the Gardiners ordinary way.*

H *The ſides of the Bark opened to put in the bark or ſhield.*

I *The Bark of the Cyen prepared for that purpoſe.*

K *This way of inoculation finiſhed.*

L *The cutting of the Bark of the Stock according to Mr.* Rea's *beſt approbation.*

M *The opening the Bark on each ſide the ſlit.*

N *The Bark prepared to be put in.*

O *The ſame finiſhed.*

P *The cut of the Cyen and the Stock for ſide-graffing.*

Q *The cut of the Bark of the Stock for another way of ſide-graffing.*

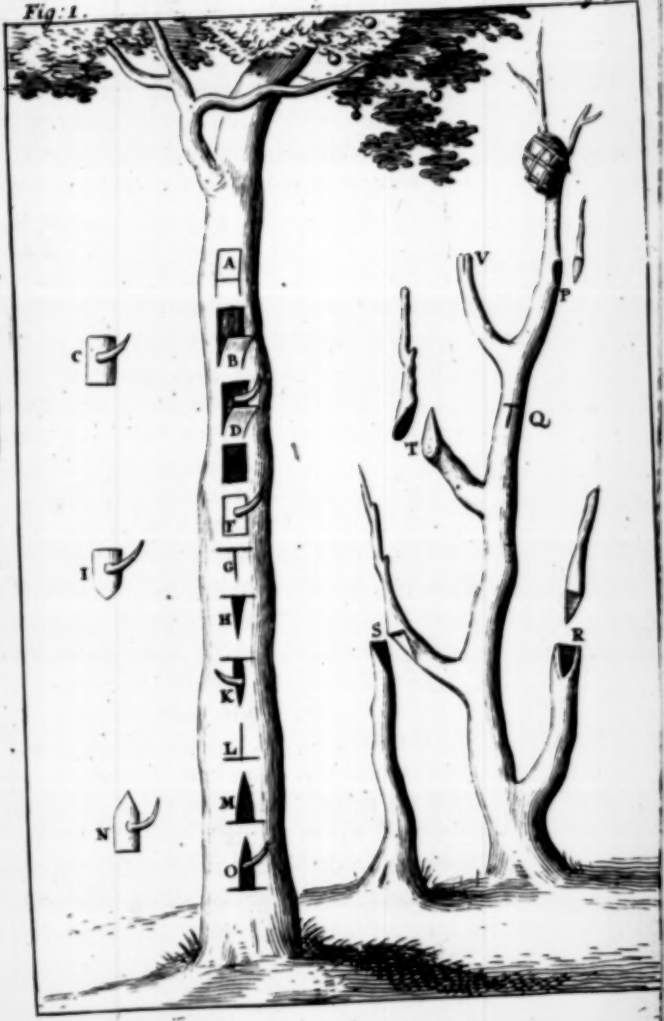
R *The cut of the Cyen and Stock for Slicing.*

S *The cut of both for graffing by Approach.*

T *The manner of Stock and Cyen for Whip-graffing.*

V *The manner of cutting the Bark of the Stock for graffing in the bark.*

W *The manner of Circumpoſition.*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lated timely in the year, it may be ſometimes ſeen whether they grow or not, time enough to *inoculate* them again the ſame year.

Apricocks will have *buds* ſooner *ready* than other *Fruit*; ſo that you may begin with them, and follow with other kinds.

Sect. 2. *Stocks* raiſed of *Peach-ſtones* are commonly big enough to be *inoculated* the *ſecond* Summer, ſometimes the *firſt* after they are ſet; when they, or any other *Stocks* are an *inch* and *half* in compaſs, or thereabouts, they are big enough to be *inoculated*. *Size, height and ordering.*

Thoſe you intend for *Wall*, or *Dwarf-trees*, are to be *inoculated* within a *handful* of the ground, and not Pruned at all till you remove them, and then you will better ſee what's neceſſary to be cut off: And theſe you may remove after *one* years growth, or *two* with more ſafety.

If you *inoculate* any *Plums*, *Cherries*, *Pears* or other *Fruit*, that you intend for an *Orchard*, or other place, for *tall ſtandards*, you may do it higher on the *ſtocks*, and Prune theſe up in the *Nurſery*, and let them grow there *three* or *four* years (according as they grow in height) before they be removed.

After

After *Stocks* that are *inoculated* have made *one* or *two* years growth, you muſt cut off the head of the *ſtock*, that remain'd above the *bud* at your firſt cutting it: Cut it cloſe to the *new branch*, that it may grow over the *cut*; let it be cut a little ſlope, and *clay'd* over, if you deſire the *branch* ſhould quickly cover it, and the ſooner it doth the better.

Choice of Buds, and what Fruits.

Sect. 3. Care muſt be had in chooſing *branches*, or *ſhoots*, from which you are to have your *buds*, that are of *ſtrong growth*, the *Bark firm*, and not *ſpungy*; ſuffer them to fade as little as may be, before you uſe them; and if the *fruit* you deſign to raiſe, be at ſuch a diſtance that you cannot have *buds* to *inoculate* the ſame day they are cut, put them in wet *Moſs*, or *Graſs* in a Box, and ſo they will keep a day and a night very well.

Nectarines, *Peaches*, and *Apricocks*, are ſeldom raiſed otherwiſe than by *Inoculation*; I knew an *Apricock graffed* in the *cleft*, as likely as might be to grow, but failed; I have heard of one *graffed* in the *bark* that grew.

The *bark* of *Cyens* taken from ſome *Plums*, is ſo tender and ſpungy, they will often miſcarry when *inoculated*; from ſuch one would chooſe rather to raiſe

raiſe by Graffing; but moſt *Plums* will hit very well being *inoculated*.

Cyens of *Apples* fail for the moſt part, their Bark being tender, and *buds weak*; but to preſerve kind of a dying *Apple-tree*, that I could not well cut a *Cyen* to Graff off, I have taken a hungry *bud* of the year foregoing, and it hath taken, and grown very well.

Cherries and *Pears* take very ſure being *inoculated* on young freſh Stocks, whoſe Bark is not very thick.

Sect. 4. Where *Inoculating* ſucceeds well, it is to be prefer'd before Graffing. *Inoculating prefer'd before Graffing.*

1. Becauſe the *Stock* will be big enough to *inoculate* ſooner by two or three *years*, than to *graff*, and your *Plant* groweth much *faſter*, after the Nature is ſo altered, than it did before, and will be ſooner ready to *Tranſplant*, than if it be ſuffered to grow *two* or *three* years longer, as it muſt be before it will be fit to be *graffed*.

2. It makes a *ſounder Tree* than one that is *graffed*, eſpecially in the cleft; becauſe it covereth the *Stock* ſpeedily and well.

3. It *hurts* not the *Stock* ſo much as *graffing*; and if it chance to fail, it may be *inoculated* next *year* again, and ſometimes the ſame *year*.

4. It's more *ſpeedy*, *eaſie*, and *delightful* than *Graffing*, and may be practis'd by *Gentlemen*, who in *June* may lye on the ground and do it; whereas they cannot bear the cold without danger of taing hurt, in *February*, or *March*, which is the chief *Graffing* ſeaſon.

Of the time of the day.

Sect. 5. It is debated among *Planters* what *time* of the *day* is beſt for *Inoculating:* I have heard an Ingenious perſon argue ſtifly for the morning; becauſe there paſſeth up much more *ſap*, or *juice*, in the *day* time, than in the *night*; as was obſerved by him in piercing the *Birch-tree*, and other *Trees*, to get the *liquor*, that diſtills out of them, for Phyſical uſes; and conſequently the *bud inoculated* in the morning, muſt be more likely to grow, having the whole days plenty of *ſap* to invite it to unite with the *Stock*, than if it be *inoculated* late in the day, and ſo muſt be diſcouraged in its new habitation, by the niggardly proviſion of the nights Sap. If you follow this advice, you had beſt wrap ſome broad *leaves*, or *Fearn*, about the *Stock*, ſo as to ſhade the *Cyen* from the *ſcorching* heat of the day following, to prevent its drying before the *Stock* hath undertaken the charge of preſerving it.

But

But this work may be done in the middle of the *day*, if the heat be not *violent*, and then you muſt (as at all times you ought) be very quick in the doing of it.

And for all that hath been ſaid before, the *afternoon* may be as good a time as any; becauſe if the *bud* have *leſs liquor* afforded it in the *night*, then the coolneſs of that time makes it leſs *thirſty*; and as its *thirſt* encreaſeth by the *heat* of the next *day*, a more plentiful *ſtream* will be very ſeaſonable to ſatisfie it.

CHAP. VI.

Of the ſeveral ways of Graffing.

Slicing, or Packing.

SECT. 1. As there are ſeveral ways (as you have ſeen) of *Inoculating*, ſo are there of *Graffing*, as now I come to let you ſee; and the firſt I ſhall ſpeak of is that which is called *Slicing*, or *Packing*, which I ſhall deſcribe here at large, and ſo it will ſerve as a *general* direction for all.

Cut off the *top* of your *Stock* in ſome ſmooth ſtraight place; if you do it with

a *Hand-ſaw*, cut it ſmooth afterward with your *Knife*, leaving the *top* flat and even.

Then prepare your *Cyen* or *Graff*, by cutting it on one ſide, from the *joint*, or *ſeam*, (that is, at every years growth) down ſlope-wiſe in the *old wood*, till it's cut quite off, that the ſlope may be about an inch long, or ſomething more, obſerving its bent, that when the *Cyen* is fixed to the *Stock* it may ſtand almoſt upright; give a cut then croſs through the *bark* at the top of the *ſlope*, and then cut a thin *chip* of that *ſlope* upward to the *croſs-cut*, that there may be a *ſhoulder* to reſt on the top of the *Stock*, but cut not this *ſhoulder* too deep, little more than through the *bark* will be enough, and this will cauſe a little *riſing* in the ſloped part, which you muſt cut down, that the whole *ſlope* may be plain and ſmooth, without dints or riſings, and lie even to the ſide of the *Stock*.

Cut then the top of the *Cyen* off, cloſe above a *bud*, about four inches above the *ſhoulder* if it be for a *ſtandard* Tree, two *buds* above the clay being full enough; but for *Dwarf*, or *Wall-trees*, you may let the *Cyen* be ſix inches long with ſeveral *buds*, that they may ſhoot forth many

ny branches, and ſpread from the very *Stock*.

The *Cyen* or *Graff* thus prepared; lay the cut part of the *Cyen* on the *Weſt*, or *South-weſt* ſide of the *Stock*, and ſo meaſure and mark the breadth and length of it, then cut away ſo much of the *bark* of the *Stock*, as the cut part of the *Cyen* may fit, drawing your Knife upward; but as the *ſtock* is bigger, and the *bark* thicker than that on the *Cyen*, ſo the *chip* muſt be longer, and broader, or elſe the paſſage for the *ſap* in the *Stock* and *Cyen*, (which is chiefly betwixt the *bark* and the *wood*) will not meet together (as in the work you will eaſily ſee) which ſhould be aimed at.

Then lay the cut part of the *Cyen* on the cut part of the *Stock*, and bind it on with courſe *Woollen-yarn*, *Baſſes*, or the inward peeling of the *Witch-tree*; if you bind with ſuch a material as will not be looſe, or rotten by Midſummer, about that time give it a cut croſs-wiſe with a Knife to ſet the priſoners at liberty.

Have in readineſs good *Clay*, free from Stones, mixt with long Hay, and daub it about the *Stock* and *Cyen*, a full inch above and below the head of the *Stock*,

work it up round the *Cyen* till it be ſharp at the top, that the rain water may run down it; and with a *Knife* or little *trowel* dipt in water ſmooth over the clay; in doing this be ſure not to diſplace the *Cyen.*

Thus you may Graft *Pears*, *Plums*, *Cherries*, and *Apples*, if it be before the *bark* of the *Stock* will part from the wood of them, for when it will, the next way following is better for *Apples.*

In the Bark the beſt ways.

Sect. 2. The ſecond way (called *Graffing in the Bark*) is much like this, and I preferr it from experience much before the fore-mentioned, or any other way, but it can only be uſed for *Apples*, becauſe all *Cyens* of other Fruit will be grown paſt uſe, before the *bark* of the *Stocks* will *peel*; which is about the end of *March* or the beginning of *April*; but this will be time enough for *Apples*, if your *Stocks* be in any thing good liking, which if they be not, they are not fit to be *Graffed* any way.

Prepare then your *Stock* and *Cyen* exactly as you were directed in *packing*, only inſtead of cutting the *bark* off the *Stock*, ſlit it on the *South-weſt* ſide, from the top, almoſt as long as the *ſloped* part of the *Cyen*, and looſen the *bark* at the top

top of the ſlit with the point of your Knife.

Have in readineſs a little Inſtrument made of *Ivory*, or a *Deer* or *Sheep-ſhank*, or *Silver*, or hard ſmooth Wood, at one end let it be made of the ſhape of the ſlope part of the *Cyen*, but much leſs every way; thruſt it down betwixt the Bark and the Wood of the *Stock*, where it was ſlit, to make room for the *Cyen*, take it out and put in the *Cyen*, but firſt cut a little of the *bark* at the thin end of the *ſlope* of the *Cyen*, that it double not in going down, yet leave it with a ſharpe edge; and becauſe when your *Cyen* is put in, it will bear the *bark* hollow from the *ſtock*, nick or ſlit the *bark*, on each ſide the *Cyen*, ſo that it may fall cloſe to the *Stock*, and to the edges of the *Cyen*. *Bind* and *Clay* it as you have already heard.

Theſe two are the beſt ways of *Graffing* for theſe Reaſons.

1. Becauſe *Stocks* may be *Graffed* thus, ſome years before they can be ready to *graff* in the *cleft*; and though *Whip-graffing* may be uſed ſooner than either of theſe, yet there are other great inconveniences attending it, as you will ſee hereafter.

2. The Stocks are this way leſs harm-

ed than where a cleft is uſed, becauſe the *cleft* lets wet into them, and makes them not ſo fit for *Graffing* again (if any fail to grow the firſt time) as theſe continue to be, though they ſhould once miſcarry, or come to any miſchance.

3. The *Cyen* will much ſooner and better cover the *Stock*, and ſo make a more *healthful*, *ſound*, and *ſwifter growing Tree.*

4. This is much more ſpeedy, eaſie, and ſure to ſucceed.

Whip-Graffing.

Sect. 3. There is another way, called *Whip-graffing*, and here your *Stock* and *Cyen* ought to be exactly of the ſame bigneſs, as the manner of performing it plainly ſheweth, which is as followeth.

Slope off the *Cyen* a full inch or longer, and do the like to the *Stock*, and tye the one upon the other.

You may if you will, make a ſhoulder on the *Cyen*, and cut the top of the *Stock* to ſuit with it, and then bind them together, and *clay* about the place.

This way is ſucceſsful enough, ſo that ſpecial care be taken, that both *Stock* and *Cyen* ſuit exactly where they are joyned together, which is ſomewhat troubleſome to do, and ſo it is to find *Cyens* and *Stocks* of an equal bigneſs; beſides the

the head will be apt to overgrow the *Stocks*; all that can be done to prevent it, is to Graff theſe very low, or if high, to give the *Stock* more liberty to thicken, by ſlitting the Bark of it with a Knife.

In this way of *Graffing* there is another little knack may be added to very good purpoſe; and that is, when the *Stock* and *Cyen* are prepared (as you heard before) to be joyned together, to make a ſlit with a *Knife* in the bare place of the *Stock* downward, beginning towards the *top* of the *ſlope*, and ſo ſlitting it a little way, and doing the like in the *ſloped* face of the *Cyen*, but beginning at the ſame diſtance from the lower end of it, as you did before from the top of the *Stock*, and ſo carrying it upwards, and then join them by thruſting the one *ſlice* into the other, till the bare place of the *Cyen* cover the bare place of the *Stock*.

This may be done likewiſe in *Graffing* by *packing*, and in both conduceth much to ſtrengthen the work, and is called by ſome, *Lipping*, or *Tonguing*.

Sect. 4. I am now going to deſcribe another way that I never read of, neither ever knew more than one that uſed it, *Side Graffing.*

it, and he a skilful Gardner and us'd it very much: Knowing no name for it I have given it the name of *Side-graffing.*

It's done by preparing the *Cyen* as in *Whip-graffing*; then without cutting off the head of the *Stock*, (but making it thin of ſide Branches) from a ſmooth place of it on the *Weſt-ſide*, take off as much *bark* as the *Cyen* will cover (as in *Packing*) and ſlit both *Cyen* and *Stock*, according to the directions given in the end of the laſt *Section*, and fix them together accordingly: Bind it cloſe and *clay* it.

If it grow, at a years end cut off the top of the *Stock* at the *graffed* place ſlopewiſe, and *clay* it.

Some done thus grow well, and I have uſed it ſucceſsfully, but ſuffer not the top of the *Stock* much to overgrow the *Cyen* the firſt year before it's cut quite off.

There is another way of this kind, I have known uſed, and is eaſier done than the former, that is, to ſlit the *bark* of the *Stock* in the form of a great T, and looſning it with the point of a Knife, and then clapping in a *Cyen*, prepared as hath been ſaid before, (but without the ſlit for *Lipping*,) *bind* and *clay* it.

This

This can be uſed only when the Bark will part from the *Stock*.

Sect. 5. The next way is that which is called *Graffing* in the *Cleft*, and is very ancient, and ſtill uſed by *common-Planters*, and it's thus performed. *In the Cleft.*

Cut off the head of the *Stock* even and ſmooth, cleave it with a ſtrong *Knife*, or *Chiſſel*, (hereafter deſcribed when I ſpeak of *Pruning* big Trees) let the ſlit run near two inches deep, let it be as near the middle of the *Stock* as you can, but not in the *pith* or *heart*; have in readineſs a ſtick of hard Wood, near a *foot* long, at one end made like a *wedg*; when you have taken out the *Cleaver*, put the *wedg* into the *ſlit*, and open it ſo wide as to put in the *Cyen*, when it's prepar'd.

Which is by cutting it down *ſlope* on each ſide, about an inch in length, beginning at the joint, but leaving it much thinner on that ſide that goeth into the *Stock* than the other that is outward, (that ſide muſt be outward that will cauſe it to lean rather *outward* than *inward*;) you may let it have a *ſhoulder* on one ſide, or both, or either, all theſe ways are uſed; but *ſhouldering* takes up more time, and makes the *Cyen weaker*, and

ſo

ſo apter by any chance to be broke off. Then with your Knife cut away any *jags*, or *roughneſs*, or *blackneſs* that remains after cleaving on each ſide of the *cleft* within, and ſo put in either *one* or *two Cyens* (according as your *Stock* is in bigneſs,) place them ſo as the paſſage of the *ſap* betwixt the *bark* and *wood*, both of the *Stock* and *Cyen*, may meet all along the *cleft*, as near as you can; draw then forth your *wedg*, and if the *Stock* be a big ſtrong *Stock*, and do pinch the *Graffs*, drive a little wedg of dry wood into the *ſlit*, but not ſo as to let the *Cyens* looſe; or for ſuch ſtrong *ſtocks* cut the *Graffs* as thick on that ſide that goes into the *Stock*, as on the outſide, which will prevent the *Stocks* hurting the *ſappy* part and *bark* of the *Cyen*.

Many cleave big *Stocks* croſswiſe again, and put in *two* more *Cyens*, but cleaving hurts the *Stock* ſo much that you had better (if you will have more than two *Cyens* in one *Stock*) *Graff* the other *two* in the *bark*, according to the *ſecond* way of *Graffing*, forecaſting one of them to be on the *Weſt-ſide* the *Stock*.

By approach.

Sect. 6. There is another way, called *Graffing* by *Approach*, *Ablactation*, or *Enarching*, which is by having a *Stock*, or

or *Stocks* grow ſo near another Tree, whoſe *Fruit* you would *propagate*, that the *ſtock* and the *branch* of that Tree may be joyned together in the manner following.

Cut the ſide of the *Branch* and of the *Stock* (where they will meet) about three inches in length, till you come near the *pith* of each, and fit them both together, that the paſſages of the *ſap* may joyn, in which poſture *bind* and *clay* them: Aſſoon as you find the *Cyen* and *Stock* to be well cemented together, cut off the head of the *Stock*, about four inches above the binding; and in *March* following, cut off the *ſtub* you left of the *Stock*, and alſo the *Cyen* underneath, cloſe to the Graffed place, that it may ſubſiſt by the *Stock* only.

It's alſo uſed to be done by cutting off the head of the *Stock* at *firſt*, and ſloping half off about two inches long, and joining the *Cyen* thereunto, being cut accordingly. *See the Figure.*

This manner of *Graffing* is unneceſſary, and ſcarcely practicable in the *Fruit-Trees*, chiefly intended in this Book; but for *Oranges*, *Lemmons*, *Pomgranats*, *Vines*, *Jeſſamins*, and ſuch like *ſhrubs* it may be practis'd.

Alſo

Alſo it's ſaid that Trees of different kinds will ſooner take this way than otherwiſe.

Among all theſe ſorts of *Graffing*, the ſecond way for *Apples*, and the firſt for all other *Fruit-trees*, are to be preferr'd before all the reſt.

The Figures with theſe directions, I hope will make all eaſie to any mans underſtanding.

CHAP. VII.

Obſervations concerning Graffing.

Size of Stocks. SECT. 1. If the *Plants* that you removed out of your *Seed-plot* into the *Nurſery*, and ſuch *Stocks* for *Stone-fruit* in the *Seed-plot* as you intend to *Graff*, be half an inch over in thickneſs, where they are to be *Graffed*, or little more, it's enough: It's beſt not to have them above an inch in the diameter, both that you may loſe no time, and that the *Stock* may be eaſier covered by the *Cyen*.

Choice of Cyens. *Sect.* 2. In providing *Cyens* or *Graffs* of *Pears*, *Plums* and *Cherries* you muſt obſerve to cut them in *January*, or the very be-

beginning of *February*, having reſpect to the forwardneſs or backwardneſs of the Spring, and the warmth or coldneſs of the Country you live in; but you muſt be ſure to cut them before the buds have any ſpeck of white appear upon them.

Cyens for *Apple-trees* will ſeldom be too forward any time before the beginning of *March*.

Chooſe ſtrong and well grown *Cyens*, that grow at the top or outſide of a *Tree* that bears well, and good *fruit* of its kind, and cut not off the tops of the *Cyens* till you *Graff* them, for ſo they will keep the better.

I have always found a *ſhoot* or *branch* of the year next foregoing to thrive beſt; and though in *Graffing* old Trees in *Hereford-ſhire*, ſome commend and uſe *Cyens* of *two* or *three* years growth, yet thoſe are ſeldom found to have convenient *buds* to put forth at, and oftentimes have *bloſſoming* buds on them, and make not ſo good a growth, neither have they ſo good a *joynt* to *Graff* at, as thoſe of the laſt year.

When you get them, you had beſt cut off at leaſt a hands breadth of that which grew the year before with them, beſides the laſt years *ſhoot*; for ſo they will

will keep the better, and you muſt uſe about an inch of that old wood in every *Cyen* when you *Graff* it.

Time. *Sect.* 3. In *January* or *February*, as you find the weather grow warm, the wind not being *North*, or *North-Eaſt*, you may Graff *Plums*, *Cherries*, and *Pears*, but not *Apples* till the *bark* of the *Stocks* will *riſe* or *peel* from the wood, which is ſeldom before the middle of *March*, and often not till *April*, becauſe this is neceſſary for the beſt way of *Graffing* them; but if you will *Graff* any *Apples* in the *cleft*, you may do it a little ſooner.

Perhaps you may not have ſeveral ſorts of *Plums*, *Cherries*, or *Pears*, ſo near you as that you may get *buds* freſh enough for *Inoculation*. In this caſe you may procure *Cyens* and *Graff* them, and they will continue freſh though you ſhould ſend for them from beyond Sea.

Cutting and ordering. *Sect.* 4. Theſe *Cyens* may be kept three *weeks*, or a *month* after they are cut, before they are uſed, and there ought to be a *fortnight* or *three weeks* betwixt the time of their being *cut*, and of their being *Graffed*, that the *Stocks* in that time may be more repleniſht with *ſap*, and the *Cyens* be more empty of it.

To

To keep your *Cyens* or *Graffs* after they are cut, you need not, as ſome direct, bury them in *moiſt mold*, for this may be a means to make them ſwell and bud forth, by receiving moiſture from the *Earth*; and then when by *Graffing* they are expoſed to the cold open *Air*, they will be in danger to wither and dye before they have nouriſhment from the *Stock*.

You may lay them in a dry houſe, ſo it be near no heat, or under an old Tree, or Hedg, and cover them all over with *dry mold*, that the *Air* may not have too much influence upon them: though they ſeem ſomewhat dry, yet if they cut with a freſh colour, and be not much withered, they will not grow the worſe, but rather the better; yea ſome that have ſeemed withered, being carried in a Cloak-bag *ſeventy* or *eighty* miles have grown well.

Suffer not the *buds* to be hurt, or rub'd in the *binding* or *carriage*.

Sect. 5. There be ſome indifferent whether they *Graff* at a *joint* or no, but forecaſt to have a *bud* directly behind the *ſhoulder* of the *Cyen*: If *Cyens* with *joynts* were ſcarce, you might practiſe ſo on ſmall *Stocks* that will be ſpeedily covered, *Of joints and height of Graffing.*

but if *Cyens* can be had with *joints*, never *Graff* with others, for theſe will cover the *Stocks* ſooner.

It will do well in *Graffing Stocks* for large *Standards*, to put but one *Cyen* into a *Stock*, and if it put forth ſeveral *ſhoots*, to cut off all but *one*, that is the ſtraighteſt and ſtrongeſt: But for *Dwarfs* and *Wall-fruit* put in *two Cyens*, if the *Stock* be big enough. Let the later be *Graffed* near the ground, the former at ſuch height as the *Stock* will allow.

Marking Trees.

Sect. 6. In *Graffing* or *Inoculating*, it may be neceſſary to have ſome *mark*, to know what kind of *Fruit* is put upon each *Stock*; if you Graff many of one kind, (as it's neceſſary for *Cyder-Fruit*) you may obſerve to make every *row* to conſiſt but of one kind, and it's but entring in a Book, that ſuch a *row* hath ſuch a kind of *Fruit* in it, and no other; but where there are ſeveral in one *row*, there may be a Stake knockt into the ground at the beginning of every new ſort, and ſo entred in your Book; and where you have very few of a kind (or for your whole *Nurſery*, if you pleaſe) you may make *marks* of ſeveral *figures* or ſhapes, in the *bark* of the *Stocks*; which *marks* enter into your Book, and what *kind* it denotes,

denotes, and at two or three years when you remove it, the *mark* will be very visible; and by renewing the *marks* sometimes, you may continue it as long as you pleaſe, and if any *Tree* be ſtolen you may own it by the *mark*.

CHAP. VIII.

Of Planting Wall-Fruit.

SECT. 1. *Stone-fruit* will be firſt ready to remove, for after two years growth in the Seed-plot or Nurſery, after they are *Inoculated*, or *Graffed*, you may well remove them, be they for *Wall* or *Dwarfs*, which you ought to do in *October* or *November*; early removing being advantagious for all *Fruit-Trees*, both for the ſecurity of their growing, and for their well growing. *Time.*

Young *Trees*, having been taken up about *November*, and the ends of the *roots* cut off, and laid in the Earth till *March* to be Planted, being then taken forth again, it hath appeared that they have put out many fibrous *roots*, at the ends of thoſe big *roots* that were cut off;

which had they done in the place they were to grow in the next Summer, this would have been a good preparation againſt Spring; and it's always ſeen that Trees ſet in *February* or *March*, make generally a much leſs growth the next year, than thoſe that were ſet before Winter. If a dry Summer happen to ſucceed, it often kills ſome of the late ſet Trees, and puts ſuch a ſtop to others, that they recover not of many years.

In ſharp Froſts, though you could dig, it's not good to remove Trees.

Preparing ground, and diſtance.

Sect. 2. Make a Trench by the *Wall*-ſide you are to ſet them up to, about *two* foot broad, and as deep, and in every place where a Tree is to be ſet, about a yard ſquare, mingle good *old rotten Neats-dung*, with the Earth, and fill it up, near as high as you intend the borders to be, and when you have fill'd it about half full, tread it down; But if you deſign no borders, make then only a hole for each Tree, of the ſquare before mentioned; but if your *Soil* be *wet*, or *binding gravel*, or ſuch like, very bad in the bottom, go not ſo deep, it will be better to ſet them ſhallow, and raiſe the Earth about them.

As to the diſtance *Wall-fruit-trees* are

to

to be ſet at, where they are to grow, you may learn that beſt by conſidering their aptneſs to ſpread: *Apricocks* and *Pears* ſpread moſt, the *May Cherry* and ſome others are of very ſmall growth; it's impoſſible to give rules for all, but the general diſtance is about four yards aſunder.

Sect. 3. If it be not a manur'd Land you ſet them in, have in readineſs ſome very *fine rich Mold*, or *ſhovellings* of a yard where Cattle are frequently lodged or fed, that hath lain on heaps till it's *mellow*, and become dry, or *rotten Neats-dung*, which you may mix with the Earth that came forth of the hole, and ſo order it, that it may be as good or better, than that out of which your Trees came: Fill the hole half way up with this, and tread it down in ſuch form (having reſpect to the *roots* of the Tree that is to be ſet in it) that the *roots* may reſt cloſe upon it. Cut off the ends of all the *roots*, (if it have one long downright *root*, you may cut it almoſt half off,) try (by ſetting the Tree in the hole) which ſide will ſtand beſt to the Wall, and then cut off ſuch branches as grow directly toward, and fromward the Wall, leaving only the ſide branches, to be nail'd unto it, *Mixing Soils, and ſetting them.*

then clap your Tree in, placing it as far from the Wall as the *top* will allow, that muſt be ſpread upon it, that the *roots* may have the more liberty to ſpread backwards: Fill up the *hole* with the *mold*, and uſe all diligence to place the *roots* of your Tree in the ſame poſture they were in before you removed it: If the Tree be young, and the Roots ſlender, this can be performed no way but by throwing in a little Soil at a time, and then raiſing up with your hands ſuch Roots as are preſſed down by it below their proper ſituation, ſpreading them on the ſoil you have caſt in, and then throwing in more, and ordering the Roots as before, ſo continuing to do till you have fill'd up the hole.

Old Trees with ſturdy Roots do not require ſo much curioſity; but you muſt be ſure that the mold lye cloſe under, betwixt, and among the Roots.

If the *Soil* be *light*, you muſt preſs it down gently with your foot, then cover them half a yard about with *Fearn* or *Straw*; or if your ground be not very *rich*, with *Dung*.

Spreading Trees on the Wall.

Sect. 4. Every year it will be neceſſary to *prune* and *nail* them to the Wall, *twice*, or *thrice*, according as they grow more

more or leſs; wherein you muſt obſerve, to bend down the ſtrongeſt *ſhoots* (that would grow upward) towards the ſides, otherwiſe they will be apt to run ſtraight upward, and not cover the ſpace you deſign for them, and by their luxurious growth, will extreamly rob the ſide branches of their nouriſhment. There will branches enow ſpring out freſh to run upwards out of them when they are ſo bowed.

Cut off ſuch as grow directly outward cloſe to the body; if you cut a part of any branch off, do it at a bud, that the cut may be covered with a freſh ſprig.

Lay none a-croſs, or under one another, but let them ſpread as the fingers of your hand when it is expanded.

The *Winter pruning* may be done, as ſoon as the *fruit*, and leaves are fallen, or any time before *February*, except *Nectarines*, and *Peaches*, which are apt to dye, if prun'd before the Sap riſe. Mr. *Rea* ſaith, the beſt time to Prune them, is after they flower.

Shreads of Woollen-Cloth are the beſt things to Nail them up with; ſome uſe gentle Leather, or an old Hat, any of theſe may ſerve turn.

Sect. 5. Sometime in the Winter, after *Baring Roots, and recruiting Soil.*

ter *two* or *three* years, if the *Soil* the *roots* are to ſpread into, be not *rich* enough, open the ground at the outſide of the *holes* you made at *ſetting*, as near round about, as the Wall will permit. If you find no *roots* bare, let it lye open a month, and then fill it up with the Earth that came forth, well mixt with ſuch a *manure* as ſuits with it.

Amending Soil.

Sect. 6. Where the natural *ſoil* is not good enough of it ſelf, whether it be in *Garden*, *Orchard*, or *Field*, there it ought to be by skill aſſiſted, and better'd, at leaſt-wiſe for ſuch a compaſs as the *roots* of every Tree take up for ſome time, if not ſo far round as they are ever like to extend themſelves.

And this muſt be done by mixing ſuch *Manures* with the *Soil*, as ſuit beſt with its temper.

If the *Soil* be *clay*, or *clay* mixed with *gravel*, or *wet heavy land*, *hot Dung*, as that of *Horſes*, or *Poultry*, is beſt to mix with it, to bring it to a due temperament.

And if the *ſoil* be a *light*, *hollow*, *eskie*, or *ſandy land*, *Marl*, *Mud* out of a Pond or River, or *ſhovellings* of *dirty yards* or *high-ways*, if they be not *ſandy*, and be well *mellowed*, by lying on heaps, and

and eſpecially if thoſe heaps are mixed with *Lime*, are proper to mend it.

If this laſt *ſoil* be *barren* likewiſe, you may properly add a mixture of *Neats-dung*.

If your Land be too *rich* (which is ſeldom ſeen) you may mix *coal Aſhes* with it.

I have ſeen an *Apple-tree* on a *Hemp-but*, which was conſtantly Plowed, and Manur'd to a great richneſs, bear more *Apples* than *four* ſuch Trees in an *Orchard* would do. And it's conſtantly ſeen in *barren hungry Land*, Trees thrive poorly, grow *Moſſey*, or *Bark-bound*, bearing very little, and that a very poor *Fruit*.

Only *Walnut-trees* and *Pear-trees* do not neceſſarily require a very *rich ground*, and will proſper beſt on *ſtony* and *light land*.

Sect. 7. When your *Wall-trees* are grown old, and full of *big wood*, you may in *three* or *four* years time renew them, by cutting out ſome of the biggeſt *ſtems*, or *boughs*, yearly, cutting each branch off at ſome ſmall *twig*, (if it may be) that either it, or a freſh *branch* may grow over the cut place; which muſt be kept covered with Clay; and ſo go on yearly, till all the *big wood* is cut out. *Renewing old Trees.*

Or

Or if you diſlike the kind of *Fruit*, you may *Inoculate*, or *Graff* the boughs with a better ſort of *Fruit*, but not all in one year, but ſome one, and ſome another.

By either of theſe ways, you may renew a decaying Tree, and keep your *Wall* almoſt ſtill furniſhed, with leſs trouble and charge, or loſs of time than by taking up the old one, and *planting* a young one in its ſtead.

Appropriating Fruit to Walls.

Sect. 8. In furniſhing your *Walls* with *Fruit-trees*, obſerve always to Plant *Peaches* and *Nectarines* up to the *Wall* that is moſt *South-ward*; the *Eaſt Wall* is to be allotted to *Apricocks*, early *Cherries*, and the choiceſt *Plums*; the *Weſt* may be ſet with *Pears*, *Cherries*, and *Plums*.

Some of the courſeſt *Pears* and *Plums*, you may ſet to the *North Wall*, both to cover the *wall* handſomly, and many years they will bear as well on it, as on *ſtandards*; eſpecially if your *wall* ſtand not directly *North*, but ſo as to have ſome conſiderable benefit of the Sun; *Nut-trees* likewiſe are proper for this *wall*, and will proſper well up to it.

If your conveniencies will allow it, and you are to build a new *Wall*, it is much

much better to have your *Garden walls* not ſtand directly towards the *four points*, than otherwiſe, and then the worſt *wall* will be much better, and the beſt good enough for your purpoſe.

As thus, the *Eaſt-wall*, to incline to the *South*; the *South*, to the *Weſt*; the *Weſt*, to the *North*; the *North*, to the *Eaſt*; or contrary, but not ſo well.

In the firſt way the two firſt *walls* will be extraordinary good, and the two later good enough for ordinary *Fruit*.

Sect. 9. In building a *New Wall*, it would be very advantagious, to make it with *half rounds*, each ſemi-circle being eight yards round in the inſide, and about ſix yards in the face or diameter, each taking two Trees; and betwixt every *half round*, let there be two foot breadth of plain walling, where you may place a *Flower-pot* on a *pillar two foot* high, or Plant a *Vine* to run up it, which every Summer, you may let ſpread it ſelf a little into the *half rounds* on each ſide it. *Making a Wall.*

I know an honourable Gentleman, in ſomewhat a cold Country, that hath his Garden walls ſo made, and his Trees bear Fruit plentifully in ſuch years as his neighbours generally fail.

I alſo ſaw a *wall* made thus for raiſing *Melons* under, by a pattern or directions from *Italy*.

I have alſo ſeen *Grapes* ripen delicately on every ſide the *cluſter*, that grew in a *half round*.

By means of theſe *rounds*, every *wall* will one time of the day or other, have a ſhare of the Sun, and the beſt *walls* (by reaſon of ſuch a reflection, and collection of the Sun-beams as will be in every *round*) will be exceeding hot, and the *Trees* be more ſecure from winds.

Having ſaid thus much here of the *Wall*, that *Fruit-trees* are to be ſet up to, thus much more may not improperly be here added.

That a *Pale* is as good for this purpoſe, and in reſpect of ripening *Fruit* better than any thing elſe it can be raiſed up to, if the *Pale* be made of ſawed boards, nine or ten foot high, and exactly joined, that no wind may come through; next to this in goodneſs is a *Brick-wall*, and then a *Stone wall*, and the worſt of all that which is made of *Timber* and *Morter*; but in this every one cannot be his own chooſer, but muſt comply with what the *Country* he lives in will permit him to do for his beſt convenience.

When

When you *Plant* your *Garden* with *Fruit-trees*, you may do well to draw the *Platform* of it in Paper, and ſo ſet down the name of every Tree, according to the place it ſtands in, whether in *Wall-fruit* or *Dwarf-trees*; the ſame courſe you may uſe about your *Orchard*, and you will find it both ſatisfactory and uſeful, that you may readily at any ſeaſon of the year, know what kind of *Fruit* every Tree beareth: The *Fruit* Planted in *Fields*, not being of ſo much variety, may be eaſily diſtinguiſhed without this help.

CHAP. IX.

Concerning Dwarf-trees.

SECT. 1. Theſe *Trees* have been of late much affected and coveted, becauſe they are of ſpecial advantage for Table-fruit, (whether *Pears*, *Apples*, *Plums*, or *Cherries*) and being but of low Stature, may be *Planted* in the *borders* of *Garden-walks*, without doing any thing elſe there about them any prejudice, by overſhadowing them; and their

Advantage of Dwarfs.

their *fruit* will be as well ſecured, and commodious for gathering as the *Wall-fruit.*

Stocks for Pear-trees. *Sect.* 2. *Plants* for this purpoſe muſt be provided, and prepared ſomewhat differently from thoſe for *Orchards*, or *Fields.*

The *Quince-tree* is generally uſed, and beſt for *Stocks* for *Pears*, both for *Dwarfs* and *Wall*; as well becauſe it may poſſibly ſomewhat meliorate the *Pear* as (and that chiefly) becauſe it groweth not to that bigneſs, as on a *Pear-ſtock* it would be apt to do.

For Apple-trees. *Sect.* 3. For *Dwarf-Apple-trees* the beſt *Stocks* are ſuch as are raiſed of the *cuttings* of other *Apple-trees*, as of the *Gennet-moil*, the *Kentiſh-Codling* and others.

That theſe are more proper for *Dwarf-trees*, than *Crab-ſtocks*, appears;

1. Becauſe the *Fruit* will be rather better'd, and not tainted with any aſperity, or roughneſs, as poſſibly it might be, if *Crab-tree-ſtocks* were made uſe of; and one chief deſign in theſe Trees is to have choice, and delicious Fruit for eating.

2. *Apple-trees* that are raiſed on ſuch *Stocks*, will not grow ſo big as thoſe on *Crab-ſtocks*, but are with eaſe and certainty

tainty kept *Dwarfs*. Mr. *Rea* judging the *Paradiſe-Apple* of ſomewhat ſlow growth in bringing forward a *Cyen*, adviſes to *Graff* a *Paradiſe* on a *Crab-ſtock*, and the *Fruit* you would have on that *Paradiſe*, that the *Crab* might yield plenty of *juice* or *ſap* to the *Paradiſe*, and the *Paradiſe* retard the growth of the *Apple planted* on it, ſo as to keep it a *Dwarf*; but beſides loſs of time, I doubt the ſucceſs of this, becauſe the *Crab* will put forth ſtrong Roots, and yield plenty of nouriſhment: For why *Apple-trees* raiſed by *cuttings* grow not to be very large Trees, I take to be, their putting forth ſuch ſmall *roots*, by which means the Tree hath *ſap* conveyed to it accordingly.

3. By uſing theſe *cuttings* for *Stocks*, you ſhall get at leaſt *four* years time, reckoning from ſowing the *Crab-kernel*, and the ſetting the *Stem* or *Cutting*, being duly ordered; As

1. By ſetting the *Stem* in the place you intend the *Dwarf-tree* ſhall grow.
2. And ſetting it in good Earth, for then after one years growth you may *Graff* it, and you will eaſily diſcern the advantage in point of time.

If

If it be ſaid *Crab-ſtocks* ready grown may be made uſe of inſtead of *cuttings*; there's this Anſwer ready, They muſt grow *two* if not *three* years after they are ſet before they are fit to *Graff*, and in reſpect of their large growth will not be fit for *Dwarfs*.

Some *Nurſery Men* have made advantage to themſelves by this ſpeedy way off raiſing Trees by *Cuttings*, but to the diſadvantage of them they put them off to for *Planting* in *Orchards*, becauſe they are never like to make large, or long laſting Trees.

Rules for providing them.

Sect. 4. The way then to provide theſe *Stocks* is thus.

In *October* from ſuch Trees whoſe *cuttings* will grow, take ſuch *ſtems*, or *branches* that grow ſtraighteſt, and which (in the place where they ſhall be *Graffed*) are an *inch*, or more thick, if they be near *two inches* it's ſo much the better, cut them off, if you can, a hands breadth below ſuch *knots* or *burrs* as are on them, (for at thoſe *burrs* they principally put forth their *roots*) and cut off the top, that they be not above a yard long, (if you cannot get them ſo long) of *Quinces* you muſt be content with ſhorter, (if they be *two foot* it may do rea-

reaſonably well: Cut off alſo all ſide *branches* cloſe to the body, except one ſmall twigg near the top, for the Sap to vent it ſelf at, ſet theſe preſently in *beds* as your *Seed-plants* were, or rather if your *Garden* be laid out (that you can know the places they ſhall ſtand in) ſet them there.

You need not fear ſetting theſe as deep, as the length will bear, ſo that there be about a *foot* above ground, becauſe they will ſhoot out *roots* all along, almoſt to the top of the ground, and ſo ſpread their *roots* in the good Soil; and by ſetting them ſomething deep they are in leſs danger of dying, and this prevents the trouble of covering the ground about them with *Fearn* or *Straw*; and by this means likewiſe they will ſtand the firmer in the looſe *Garden-land*, for *Graffing* at a years end, and better ſupport a *ſpreading top* afterwards.

Sect. 5. But becauſe it's hard to meet with great plenty of ſuch *branches*, thus to be cut, and ſet for *Stocks*, that have *burrs* or *knots* upon them; *Planters* have therefore found out a way (which is called *Circumpoſition*) to bring theſe *Knots* or *Burrs* upon *Branches*, that had them not before, and to mend and improve thoſe

By circumpoſition.

that before had them, and the way of it is as followeth.

About the beginning of *February* next before you deſign to cut theſe *ſtems*, directly above the place you intend to cut them off at, for about a *foot* in length, faſten about them ſome Earth in an *old Hat*, or *Boot*, or *Bag* made of ſome ſtrong Cloth: and in that Earth they will have put forth Roots againſt the *October* following, when you are to cut them off to ſet them.

Or (which is a quicker and readier way) you may dawb ſome *wet Earth* or *Clay* about the place, and wrap a *Hay-band* about it, putting ſome moiſt Earth likewiſe betwixt the *rounds* of the band, and then running it about again over the ſpaces betwixt thoſe firſt *rounds* of the *Hay-band* and making faſt the ends of it. If the *ſtem* have no *burr* before you go either of theſe ways to work, then firſt take off here and there a little ſlice of *Bark* about an *inch* long round about it near the middle of the place to be covered as hath been directed.

Some direct, That before this application of the Earth, about an *inch* breadth of the *Bark* be taken off, round about the part of the *branch*, that is to be ſurrounded

rounded with the Earth, that *roots* may ſhoot out in greater quantity, by coming out in the upper *skirts* of that *circle*, as well as in the lower; but this is but a Crotchet, and grounded (as my Lord *Bacon* hath truly obſerved) upon the opinion of the *Deſcenſion* of the *Sap*; whereas indeed there is no ſuch thing, for the whole maſs of *Sap* is always aſcending; in leſſer quantity in the Winter, becauſe the Tree is then only to be nouriſhed, and kept alive, to which end a ſmall ſupply is ſufficient, and yet neceſſary; and in greater plenty in the Summer, to furniſh the Tree with leaves, fruit, and new yearly growth. And the true reaſon why the *leaves* and *fruit* fall off towards Winter is, not becauſe the *ſap* returns downward from them, but becauſe they have arrived to their full ripeneſs, and the Tree fails by degrees, to convey up ſo much Sap as it did in the Summer to them, to produce freſh ones; and therefore conſequently that's an idle miſtake too, to think that the *ſap* or *juice* in the Winter, is laid up in the Roots as a *repoſitory*, as appears plainly, inaſmuch as they are ever found dryer in the Winter than in the Summer.

So that upon the whole, this taking

the *Bark* off round the *branch*, is good for nothing, but to endanger it, by intercepting the *juice* or *ſap*, which riſes in greateſt quantity betwixt the *bark* and the *wood*; but if as before was hinted, you take ſome little *ſlices* of the *bark* off round the *branch*, here and there, leaving the Bark intire in ſome places, this may by checking the Sap, cauſe it the more abundantly to paſs into *roots*.

But to proceed to the buſineſs in hand, you have ſeen the way of preparing *cuttings* by *circumpoſition*, and though ſome will pretend to raiſe Trees of any kind by the uſe of it, yet it's certain it avails not, but only in ſuch as by a peculiar property are apt to put forth *roots*, being cut off and ſet into the ground; and thoſe generally known, and made uſe of this way, are the *Kentiſh Codling*, the *Gennet-Moil*, ſome ſorts of *Sweet-Apples*, and *Bitter-ſweets*, the *Quince-tree*, the *Mulberry-tree*, and the *Paradiſe-Apple-tree*, which laſt is much commended by the skilful Mr. *Rea*, for to raiſe *Stocks* for *Dwarf-Apple-trees*.

Of ſetting down an old Tree.

Sect. 6. Another way to raiſe *Stocks* for *Dwarf-trees*, is to cut down ſome one Tree of little worth, of ſuch a kind as you want *Stocks* of, about a *foot*, or more from

from the ground: This will make ſome kind of Trees very apt to caſt forth very good *Suckers* from the old *roots*, ſuch as at two years growth may be *tranſplanted*; and the Stump above ground, will alſo put forth abundance of young Shoots: After theſe young *ſhoots* have grown out of the ſtump one year, caſt *Mold*, or *Earth* about them, a good height; ſo that you cover not the *tops* of any of them; where let them grow two years more, and they will be well rooted, then cut them off from the old *Stock*, (which after that may yield freſh ones again) and ſet the *ſhoots* you take off as before hath been directed about Cuttings.

Theſe will be about three years longer before they be ready to *Graff* than *Cuttings*, but will be very good young freſh *Stocks*, and is a good way to raiſe *Stocks* of the *Quince-tree* for *Pears*; becauſe *Quince-trees* generally grow ſo crooked and irregular, that it's difficult to procure any conſiderable quantity of them by *Cuttings*.

If they ſhoot up tall after they are molded, you had beſt *top* them at a convenient height, it will make them grow the more in bigneſs, and ſo be ſooner

fit to *Graff.* But if you have a deſire to have any of the ſame kind, as the old Tree was, you need not top them.

And by this means if you want *Quince-trees*, *Codlings*, *&c.* you may be furniſhed with plenty, that will make better and handſomer Trees than if you raiſe them by *Cuttings.*

By Suckers. *Sect.* 7. You may alſo raiſe *Stocks* for *Dwarf-Pear-trees* from *Suckers* of *old Pear-trees*, (if you cannot conveniently get enow of the *Quince-tree*) for many *Pear-trees* caſt them naturally, which being preſerved from Cattle, may be taken up, and ſet in beds of Earth as you did the *Seedlings.*

If your *Pear-trees* yield not *Suckers* of themſelves, you need only cut off the *top* of ſome old ill *Pear-tree* (and *Graff* it with a better *Fruit* if you pleaſe) and the *roots* will caſt forth *Suckers* plentifully, and you may help them by making a ſmall Ditch or Gutter, ſo as to bare ſome of the *roots*, about two yards diſtant from the Tree, or pare off the Graſs (if any grow about the Tree) that they may have the more liberty to ſpring up.

Or in this caſe you may bare the *roots*, and then give a *cut* croſs ſome *roots* almoſt to

to the heart, and from the croſs cut cleave the *root*, raiſing up the looſe part, and put in a little ſtone to keep it open, cover it three inches over with *mold*: let this be done, if you can, where you find a *bud*, or *eye*, on the *root*, for the *ſucker* to ſhoot out at; and either *Inoculate* the young ſhoot in the place where it ſtands, or remove it to ſome other place after a years growth, and when you do, cut off with it about a foot of the *old root*; and by this means you may have *ſuckers* from ſome other Trees, that do not naturally yield them.

Sect. 8. To have *Stocks* for *Dwarf-Cherries*, and *Plums*, or for ſuch *Trees* for a *Wall*, the ſpeedieſt way, and ſuch as will ſucceed for that purpoſe, is by *ſuckers* of the common *Red-Cherry*, and any ordinary *Plum-tree*; both which caſt up *ſuckers* plentifully. *For Cherries and Plums.*

If the *Suckers* grow in a place that is ſecure from harm, you may *Inoculate* or *Graff* them before removal, under their Mother Plant, and let them grow there one year after; and hereby you will gain a years time and more; chooſe ſuch *ſuckers* as grow at greateſt diſtance from the old Tree.

Ordering the heads of Dwarfs.

Sect. 9. In *Graffing* or *Inoculating Stocks* for *Dwarf-trees*, obſerve to do it as low as you well can, with two *Cyens*, and thoſe longer than in *Graffing* for large *Standards*, that they may ſpread from the ground.

And after they are grown two, or three years in the places they are to ſtand in, to make them ſpread, and to keep the boughs outward, you may tye an old *hoop* of a *Barrel*, or ſome ſuch thing, in the midſt of the *branches*, to bear them a good diſtance one from another; but if one *branch* be much ſtronger, or more inclined to grow upright than the reſt, then you may drive a Stake into the ground, and tye the ſturdy one down to it.

If you cut the *bark croſs-wiſe* in ſeveral places on the inſide of the *branches*, when they are placed as you would have them, it will be a means to make them more willing to continue in that order of their own accord, after ſome years growth: If any one *branch* ſhoot out much further than the other, cut off its *top* to keep it even with the reſt, and yearly cut much off, eſpecially new *ſhoots*, that grow directly upward, after they are grown to that height you deſign

ſign them to be of, which may be about a yard and a half.

Sect. 10. Having directed how to raiſe *Kentiſh-Codlings*, *Gennet-moils*, *Quinces*, or any that grow of *cuttings* for *Stocks*, I need give no other rules for raiſing Trees, or Hedges of the ſame kind of Fruit, only you need not cut them ſo ſhort as you do for *ſtocks*. *Trees of Cuttings.*

I have ſeen *Codlings Graffed* on *Crab-ſtocks*, and ſet in a Garden; but I think it will encreaſe their growth, becauſe *Crab-ſtocks* have great *roots*, and will yield them more plenty of nouriſhment than *roots* of their own putting forth, when they are raiſed by *Cuttings*.

Others *Graff Gennet-moils* on *Crab-ſtocks*, and they thrive well, and bear a larger and (ſome think) a better *Fruit* than thoſe Trees of that kind raiſed by *Cuttings*; I have *Graffed* ſeveral of them in *rough* and *woody grounds* which have grown with very ſtrong *ſhoots*, and covered the *Stocks* very ſoon.

CHAP.

CHAP. X.

Of Planting an Orchard.

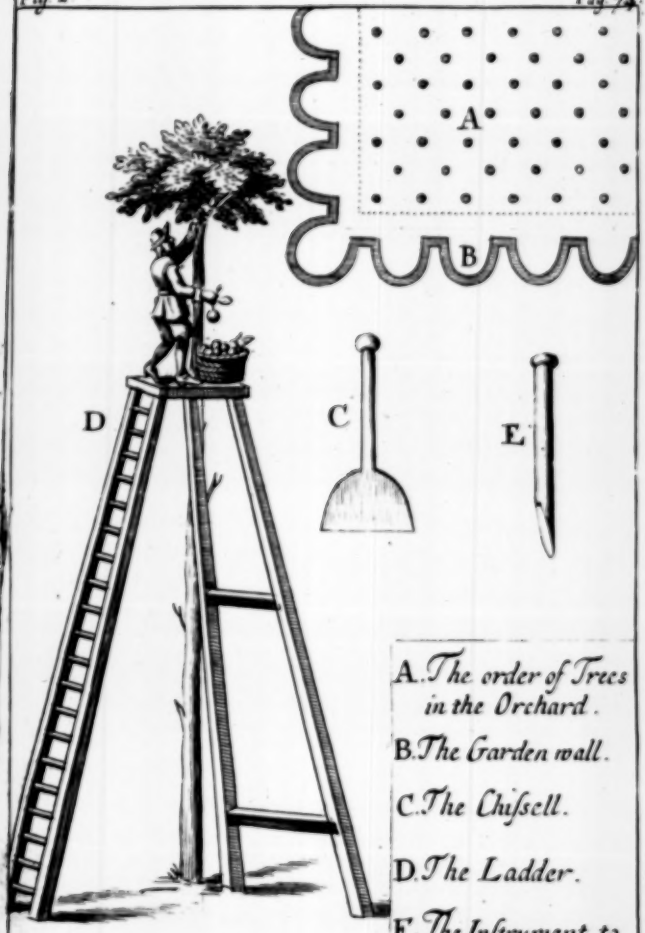
Choice of ground.

SECT. 1. So far as it lyeth in a Mans power to chooſe a plot of ground for his *Orchard*, he ought to do it with reſpect to theſe advantages.

It ſhould lye conveniently near him, declining and lying open towards the *South*, *South-Eaſt*, or *South-Weſt*, and defended from the *North*, *North-Eaſt*, and *North-Weſt* winds by buildings, woods, or higher grounds; the land ſhould rather incline to *dryneſs* than *moiſture*, without *Springs*; the *Soil deep*, and a *fat* Earth, not a *ſtiff cold Clay*, or *binding Gravel*, nor a *light ſandy* or *eskie hollow Earth*: Yet with good Husbandry, if it run not into the extreams of any of theſe, *Fruit-trees* may proſper reaſonable well in it.

But the natural *Soil* for an *Orchard* is more to be reſpected than a *Garden*, for the *Garden-Fruit-trees*, and what elſe groweth there, rooteth little deeper than it may eaſily be *manured*; but *Pear-trees* and *Apple-trees* in *Orchards* ſhould grow to be large Trees, and therefore ſend forth

roots



A. The order of Trees in the Orchard.

B. The Garden wall.

C. The Chiſsell.

D. The Ladder.

E. The Inſtrument to graff in ye bark with.

roots broad and deep, ſo that it tranſcends almoſt all coſt and pains, to enrich the ground for them, as far as the Roots every way reach.

Sect. 2. If the Land you intend for it be a *Turf*, or *green-ſward*, you will do well to Plow it two years before you ſet your Trees in it, to make it *mellow* and looſe, that the Trees may the better take root; and you may then lay on *Manure*, which by Plowing will be well mixt with the natural *Soil*; and uſe ſuch *Manure* as will beſt ſuit to amend it, according to what you have heard before in the 8th *Chap. Sect.* the 6th. *To qualifie ground.*

If your Land lye very *flat*, that wet is apt to ſtand upon it, or be a *ſhallow ſoil*, you may ſomething help it in Plowing alſo, by gathering the Land always up, in and near the place where you intend the *rows of Trees* ſhall afterwards ſtand, which in two years time will ſomething raiſe it, and thicken the *Soil*, and the *Reanes* or *Furrows* ſo made, will help to carry off the Water.

But if it be a *ſpringey Land*, you muſt Trench it at the head of the Spring, and that deeper than the Channel of the Spring runs in the Earth, which you may leave open, and yearly cleanſe, or fill it

it with *Oler* boughs, and cover them with the Turf and Earth that came forth, much higher than the other Land, for the Wood and looſe Earth will ſink very much by degrees.

If it be not *ſpringey*, but only lye ſo *low* and *flat*, that in the Winter Rain, or Land-floods will lye upon it, and that it hath been lately Plowed, or that you will not loſe two years time by Plowing it, before you ſet your Trees, or if it be a *ſhallow* or *ebb ſoil*, you had beſt ſet the Trees by *Tumping*, according to the directions in *Field-planting*, which you will find hereafter ſpoken fully to in its proper place.

Of uneven ground. *Sect.* 3. If there be any unevenneſs in the Land, ſome direct to level it, by carrying the banks into low places; but this will not only be very chargeable, but hurtful, by making the high places too *barren*, and the low ground too *rich*.

But that your Trees may grow ſomewhat level in their *tops*, and not one over-ſhade another, and alſo appear comely, you may forecaſt to ſet ſuch Trees as grow *pendant*, or are not apt to grow tall Trees, on the higheſt ground, and ſuch as are aſpiring in the lower places.

Sect. 4.

Sect. 4. The beſt time to *Tranſplant* into *Orchards*, is from the end of *September*, to near the end of *November*, the ſooner the better: If the leaves are not all fallen when you remove your Trees, pick them off. *Time and manner of planting it.*

If your Trees are not very weak bodied, Prune them up, leaving *three* or *four* of the principal *branches* on the *top*, that grow outward, which ſhould be lopp'd off almoſt a years growth; but if they be weak (leſt the wind ſhould injure them by toſſing them) you may top them lower, doing it at a *bud*, or ſmall *twig*; and in big Trees, cut the *top* almoſt all off; and whenſoever you *tranſplant* young Trees, cut off the end of all big *roots*.

Sect. 5. At three years end, after *Graffing* in the *Nurſery*, Trees may be fit to be removed into an *Orchard*, eſpecially if you Plow (or which is ſafer dig) the *Orchard land*, and ſet Beans and other *Kitchen-Garden-ſtuff* in it for ſome years; but if it be ſuch a piece of Land that you Graze, then you muſt be ſure their heads be grown out of the reach of Cattle before you ſet them there, and you muſt Fence them one of the ways mentioned hereafter, in the *Chapter* of *Field-planting*. *Of removal of Trees.*

Sect.

Of diſtance. *Sect. 6.* The *diſtance* of Trees in *Orchards* ought not to be leſs than eight yards, neither need it be more than *thirteen*, or *fourteen*; the richer the Land is, the greater diſtance you ought to ſet the Trees at from one another, to which you ought to have reſpect, and alſo to the kinds of *Fruit-trees* you Plant, for ſome Trees take up more room in their growth than others, as moſt *Pear-trees* more than *Apple-trees*, and ſome *Apple-trees* more than others, according to their aptneſs to grow more or leſs, too tedious and difficult to be here related; only the *Redſtrake* being generally a deſired Fruit, you may take notice that it's one of the leaſt *Apple-trees*, where it yields the beſt *Cyder*, ſometimes it's almoſt but a *ſhrub*.

It's certainly beſt in many reſpects for Trees to be Planted at a very good diſtance; for,

1. The Plantation will be little annoyance to the Land, if either you ſet Garden ſtuff in it, ſow Corn on it, while the Trees are young, or Graze it when they are grown up.

2. Whereas ſome ſay the more Trees, the more Fruit; that's abſolutely falſe, for when they are ſet ſo cloſe, that the Sun

Sun cannot have a good influence upon them, they bear poorly and ripen worſe.

3. They cannot grow to be Trees of that *ſize* as they would, (if the land be good) being ſet at a good diſtance, and ſome kind of Trees being of ſtronger and ſwifter growth than others, will ſo domineer over their neighbours, that they will make them almoſt good for nothing.

4. You may plant betwixt every Tree a *Cherry-tree*, or *Codling-tree*, which may grow up, and bear with the other Trees many years, and never prejudice them, but will decay before the others are at full growth.

Or you may ſet a young *Apple-tree* or *Pear-tree*, betwixt every two of your *ſtandards*, that you ſet in your *Orchard*, and nurſe it up with neceſſary *dreſſing* and *pruning*, *ſeven* or *eight* years, or leſs time, to *Tranſplant* into *Fields*, or *Paſture-land* where Cattle feed, whereby with little help it will not be in ſuch danger of hurt from Cattle, as ſmall ones would, and bear *Fruit* ſoon after it's ſet; and you cannot let them grow ſo long in your *Nurſery* without *galling*, or *hurting* one another; unleſs when you remove

move Trees out of your Nurſery you take care to leave every other Tree, whereby they may have liberty to grow big, and ſo more fit for your fields.

Of tranſplanting Trees young or old.

Sect. 7. I know ſome are for removing Trees very young, and it's certainly the beſt way if they can be ſecure from danger, which in *Orchards* or *Fields* where Cattle have liberty to feed they cannot well be with ordinary fencing, unleſs they be of *five* or *ſix* years growth after *graffing*. He that hath a *Nurſery* of his own, and removes them into places ſo near that he can well do it, let him the very ſame or the next day after they are taken up, ſet them in the place appointed for them, and not cut off too much of the roots, but the greateſt part of the top. And he may do well to plant *ſtrong* and *well grown* Trees, eſpecially in his *fields* and *out-grounds*; for the charge of Fencing will be much eaſed, and being carefully ſet they may proſper as well, or better than ſmall ones, eſpecially in *uncultivated*, or *ſtiff* land by Nature, where young Trees cannot ſo well put forth *roots*. And here I ſhall propoſe a ſurer way to have old Trees remov'd grow, and proſper well, than is commonly practis'd; that is,

If

If you chance to have any Trees betwixt *ten* and *thirty* years old, that you have a mind to remove, you muſt about *November*, the year before you *tranſplant* them, dig a trench, as narrow as you pleaſe, but ſo deep as to meet with moſt of the ſpreading Roots, at ſuch a diſtance round about the body of the Tree, as you would cut the roots off at, when you remove it; (about half a yard diſtant from the body may do well, if they be not very large Trees, but if you have not far to carry them leave them longer;) as you make the Trench cut the *roots* you meet with clear off, and ſmooth, without *ſplitting* them, or *bruiſing* the *bark*, fill up the Trench again; and by *October* next after, when you take up the Tree to ſet it elſewhere, you will find thoſe great roots will have put forth many *fibrous roots*, and made preparation for more; which freſh and tender roots, upon removal, will enable the Tree to draw more nouriſhment than otherwiſe it would, and conſequently to proſper the better in its new manſion.

Sect. 8. The beſt way you can ſet Trees in an *Orchard* is according to the Figure which is called a *Quincunx*. *The order.*

You are to proceed in ſetting your Trees in the ground by the ſame general rules, given for *Wall-fruit*, obſerving exactly all that is there, but only what in particular concerns the *wall*.

Alſo in *tranſplanting* any big Trees, men *generally* obſerve to *coaſt* them, (as it's termed) that is, to place the ſame ſide of the Tree to the *South*, *Eaſt*, *&c.* as grew formerly that way, where it ſtood before; to which end before you remove it, you had beſt make ſome *mark* in the *bark* of the Tree, which way it ſtood; this you may obſerve in ſtraight Trees, but it's more material if your Trees lean one way more than another, to ſet the leaning ſide towards the South-Weſt, from whence the ſtrongeſt winds blow.

The Fence. *Sect.* 9. The beſt *quick* Fence for your *Orchard* is a good *white-thorn*, that when it's grown up may be plaſhed, the better to prevent the creeping of *Hogs*, or *Sheep* into it; ſet no *ſmooth quick* in it, that may grow to great Trees, becauſe they will be hurtful both to the *Hedg* and *Fruit-trees*, both by their *tops* and *roots*, when they are grown up; but ſet two *rows* of good *Hawthorn*, and make the *dead-hedg* on the outſide the *ditch*, and

and the *quick-ſet* will grow the faſter; for the hedg upon the ditch is apt to choak the *quick:* And thus with ſometimes weeding it, you may ſoon raiſe a good fence.

If you have an *old hedg* already about your *Orchard*, ſcour the ditch, and *plaſh* the *hedg*, and cut down all big Trees that grow in it, unleſs on the *North*, or *Weſt-ſide*, the one requiring a defence to keep the *Orchard* warm, the other to ſecure it ſomewhat from the ſtrong winds, that blow down the *fruit* before it's ripe, though it's better they grew on the outſide the hedg.

Sect. 10. Your *Orchard-fruit-trees* as well as others, will need ſome *pruning*, which you may obſerve to do after this manner; if you deſire they ſhould be tall Trees, cut off all the ſide-*branches* till they are grown to the height you deſire; if to ſpread low, let ſome be left on each ſide, that the boughs on any one ſide may not weigh down the Tree, but that it may grow ſtraight upright. *Pruning.*

And ſuffer them not the firſt three years (at leaſt) to grow *thick* and *buſhey headed*, by cutting off ſome of the *inſide ſhoots*, and ſuch as grow *croſs* one another,

ther, or *pendant*; what you cut off from the *bodies*, or any *branch*, do it close and even, that the *bark* may grow over it: It you cut part of any *shoot*, or a *Cyen* for *grafting*, cut it close at a *bud* or *sprig*, that in that case the wound may again grow up and a *stub end* not be left behind.

When Trees grow big, that a knife will not prune them, procure an Instrument like a broad *Chissel*, the handle of Iron, and the edge alike on both sides, not sloping on one side like that of Joyners, but plain as a knife, and very thin, about 3 or 4 inches in breadth, the form you will see in the Table of Figures; with which, and a *Mallet*, you may take off a bough, or large branch as you will, without either hurting the *bark* of the Tree, by cutting too near, or leaving a *stump*, by not cutting near enough; one of which is not easily avoided by the chance blows of an *Ax* or *Hatchet*; and being amongst thick boughs, your *Chissel* and *Mallet* will be more governable than other instruments. If the boughs are very large you may use a *Saw* first, and then smooth it with the *Chissel*.

Soil amending. *Sect.* 11. You will do well, if your *soil* be not *rich* enough, once in *three* or *four* years, in the Winter time, to open the Earth for

for a good ſpace round about the *body* of each Tree; and about a month after, with ſome proper *manure* mixt with what came forth fill up the *hole* again: but if you Dig or Plow your land, you will have no need to do this ſo long; and if your Trees were ſet by *tumping*, you need not do this till the *roots* are grown paſt the ditch that was made about the *tump*.

The Water that ſoaks from a Dunghil is a good thing to enrich the Earth, about the roots of Trees; and if your *Orchard* chance to lye ſo, as that it may be floted with it ſometimes, you may do it after this manner.

Make a little trench along the upper part of the *Orchard*, and from it cut a ſmall gutter down every row of Trees, take off the upper turf, for half a yards breadth round about every Tree, at about a foots breadth diſtant from the body; when a rainy day comes, let this ſoke go down one row, ſo that (as near as you can) every Tree may enjoy it *three* or *four* days at ſeveral times in one Winter.

If your *Orchard* ſtand ſo that you cannot convey this water to the Trees after this manner, you may carry *two* or *three* Pale-full to every Tree, *twice* or *thrice*

a year, and pour it in where the Roots were opened, and againſt ſpring put in the old Earth again; when you do this firſt, ſtir up with ſomething the bottom of this water, the more to thicken and enrich it.

This will follow the roots, and enrich Trees more than can be done by Manure, or Dung, ſo that you ſuffer the water not to be above a days time at once upon any one Tree.

Placing of Trees.

Sect. 12. Within your *Orchard*, on the *North-ſide*, ſet the firſt *rows* of *Pear-trees*, or ſuch other Trees, as you know are apt to grow talleſt, and the reſt *Southward*, as they decreaſe in height, as near as you can judge; for ſo ſhall all your Trees ſhare in greater meaſure of the *South*-Sun, and will be leſs lyable to receive damage by the *Northern* cold.

On the outſide of your *Orchard*, if it be not well defended, plant on the *North-ſide two* or *three rows* of *Walnut-trees*, *Cheſnut-trees*, or ſome large growing Trees, thicker than is uſually done on other accounts, to preſerve your *Orchard* from the *Northern* air.

Some are alſo for Planting a defence on the *Weſt* ſide, to help to preſerve them from the *Autumnal* winds, which

which throw down the Fruit before it's ripe.

CHAP. XI.

Of Planting in Fields.

Encouragements in general.

SECT. 1. The benefit of this kind of *Planting* is apparent in ſeveral Countries in *England*, where it hath been of long and general uſage, and in many other Countries, Gentlemen have begun already to imitate them, which ſhould much encourage others to follow; for the more there are that *plant*, the leſs particular perſons will loſe by *Thieves*, and where *fruit* is in great plenty, it is found to be more ſlighted by idle people; and beſides if a Man have ſtore, he will not feel the loſs of a little; or it may quit his coſt, to have one to caſt an eye to them, for a Months time near ripening; and further yet, *Cyder-Apples*, *Baking-Pears*, and *Pears* for *Perry*, are ſo little grateful to the taſt, (which pilferers chiefly aim at pleaſing) that he that taſts them once, ſhall ſcarcely find his teeth water after them a ſecond time.

However the benefit of *planting* in *Fields* much out-weighs theſe, and all other inconveniences, for by this means you may almoſt have a double crop on your lands, *viz. graſs* or *grain*, and your *fruit*, and the land rather benefited (as the matter may be ordered) than damaged; one of theſe Trees alſo ſometimes bears as much *fruit*, as three of the beſt in a thick *planted Orchard*; the benefit whereof for ſale, or uſe in a Family for baking, or Liquors, or other uſes is known to be ſo conſiderable, that I need ſay no more of it.

Particularly of Pears.

Sect. 2. But becauſe the *planting Pear-trees* abroad in Fields, is of leſs reputation generally than the *planting* other *Fruit-trees*, I ſhall here give you ſufficient ſuggeſtions to take off the Aſperſion.

1. Some *Pears* do not make ſo contemptible a liquor, as *Perry* is commonly reckoned, but very ſtrong, and kept *two* or *three* years, drinks to admiration, ſo that ſeveral good Palates, that have drank of it, have not been able to diſtinguiſh it well from liquors of more eſteem.

2. Their *fruit* is not eatable, and ſo in leſs danger of Thieves, in your out-grounds than *Apples* are.

3. They

3. They will grow on barren land, where *Apples* will not proſper ſo well.

4. They are Trees of long continuance, and often grow to that bigneſs, and bear ſo plentifully, that one ſingle Tree will bear *fruit* enough to make a *Hogshead* of *Perry*, ſometimes *two* or *three* in one year, which would ſave the expence of much *Malt*, though the liquor were but mean.

Sect. 3. There be *ſeven* ways of *Planting* in this kind; I ſhall ſet them all down, that every man may uſe that which beſt ſuits with his conveniency, and good liking. *Seven ways.*

1. If your land be in Tillage, you may ſet *fruit-trees* at *thirty* yards diſtance from one another, throughout the whole Field, after the manner of an *Orchard*; and you may go on with your Plowing, with the loſs only of about a yard, or *four* foot ſquare of land, about every Tree, for twenty years; and when they are grown ſo big, that you think your Corn receives hurt by the ſhade, or droppings of the Trees, if you can turn it to Paſture, the Trees will improve moſt kind of land, by keeping it warm in the Spring, they will make the Graſs grow more early, and by ſhades in the Sum- 1. *Of Planting whole fields.*

Summer, preſerving it from burning; but the Trees being ſet at ſuch a diſtance, the land may continue fit for any purpoſe for ever, if you dreſs or *prune* theſe Trees higher up than any other, that no boughs may hang in the reach of Cattle, and for the convenience of going about them with your *Team*, to any work, and thereby the Air and Rain will have free acceſs to the graſs, or grain near about them, and the fruit will be ſafer from common pilferers.

Theſe need no other *fencing* than thorns bound about them, and a ſtake driven in the midſt, to keep them from ſhaking; becauſe you may receive the profit of the Stubble or Fallow, without ſuffering any large Cattle, that will browſe upon them, to come into the ground.

II. *walks.* *Sect.* 4. Another way of *planting fruit-trees* in *Fields*, is by ſetting *walks* of them, running through the midſt, or along the ſides of your Paſture ground, where you have a mind to have *walks* for ornament: For why we ſhould not plant *Fruit-trees* for *walks*, as well as *Sycomores*, *Aſh-trees*, *&c.* I know not, there being ſome ſorts of *Fruit-trees* that will (and almoſt any kind may be ordered by

by pruning, ſo as to) grow very handſome in ſhape, beſides the beauty and ſweet ſmell of the bloſſoms, and worth of the *fruit*.

To prevent damage by Cattle, if you go this way to work in *Field-planting*, they muſt be well grown before you ſet them; that is, they muſt be of about *ſix* years growth, and then well *feneed:* and there are two ways uſed to ſave them harmleſs. *Of Fencing.*

1. *One* much commended is by *tumping* them; and it is performed thus: Set your Tree in the place deſign'd, almoſt on the top of the ground, no deeper than to make it ſtand, though all the *roots* be not covered, till the *tump* or *mound* be raiſed about it; and then take a line, about a yard and quarter long, tye the one end of it about the Tree, but ſo that in going round the Tree, with the line ſtrain'd, it may ſlip about the Tree as you go, faſten the other end to an iron *ſetter*, or ſtick with a ſharp point, and as you go round the tree mark the ground; make then a ditch on the outſide of the round *ſcore*, and lay the *turf* handſomly, *two* or *three* heights, with the graſs ſide outward, ſo as to make the work full half a yard high; caſt *By Tumping.*

caſt the *mold* out of the *ditch*, obſerving to throw the beſt of it next the *roots* of the Tree, till you have raiſed it within, as high as the *turf*, then prick ſtrong thorns into the *mold*, that they may lye upon the *turf*, and point outwards, a yard over the *turf*; as you place the thorns, put more *turf*, or *faſt heavy* Earth out of the ditch upon the ends of them, treading it down, the better to fix them; and lay the Earth ſhelving down from the *turf* towards the Tree, that if rain fall, it may ſoak towards the *roots*; if you have any ſmall *Thorns*, *Briers*, *Furs*, or *Gorſt*, lay it on the top of the work finiſhed, round the Tree, and repair all yearly, as you ſee cauſe, which may be done with ſmall trouble. The great convenience of this way of ſetting *fruit-trees*, will appear in theſe following Obſervations.

Advantages therein. 1. If your land be over *moiſt*, this ditch will drain all wet from the *roots* of the Tree; but if the land be *clay*, or ſuch that water will ſtand in, then when you perceive it (which is very rarely) cut ſome little notch or trench, to let it out.

2. This way of ſetting, is commended in dry land; becauſe the Earth of the

the *mound* will ſecure the *roots* from the heat of the Sun, and every ſhower of rain will much refreſh it, by ſoking towards the Tree.

3. You need not bind your tree to a ſtake which doth often gall and hurt the Tree, for ſo much Earth about it will keep it ſteady.

4. If your land be *ſtiff*, or *ſtrong old land*, the *mound* made of it will *mellow* and improve about the *roots*, and alſo by that time the *roots* ſpread as far as the ditch, it will be fill'd up with *mold*, fallen from the *tump*, and with ſticks, leaves, *&c.* which will be *rotten*, *looſe* and good for Trees to root in; and by that time they will need little or no defence, if any at all; a few thorns tyed about the bodies of the Trees, to keep Cattle from rubbing againſt them, will be enough.

5. The chief benefit of ſetting Trees thus, is, that where the *ſoil* is ſomewhat too *moiſt* or *ſhallow*, the Tree being ſet on the top of the land, will put forth its *roots* plentifully into the Earth caſt up, and thence ſhoot into the upper *turf*, and beſt land, that had been *Plowed* and *manur'd* before.

2. The *ſecond* way of fencing is, by erecting, *By Paling.*

erecting, at a *foot* and half diſtance one from another, about every tree, three ſmall poſts, (if they be ſawed they need be but *three* inches ſquare) or you may uſe poles, or ſtraight boughs, either whole, or if big enough, cloven in *two*, *three*, or *four* parts, about *five* foot above the ground in height; being driven into the ground, nail a croſs-bar of wood, from each to other, within a hand breadth of the tops of the poſts, to which bar, nail a pale, or two, betwixt each two poſts, ſtuck into the ground, or nail'd to the like croſs bar, within a foot of the bottom of the poſts; the way of it may be ſeen now in diverſe places, and learnt in a minute; but I think what's here ſaid makes it plain enough.

Where it's requiſite. This is more chargeable than *tumping*, where timber is ſcarce, but much more durable than it, and abſolutely neceſſary where *Deer*, or *Rabbets*, or any thing that *peels* the *bark* of Trees come into the land planted.

III. *By Planting near hidges.* *Sect.* 5. Another way of *planting* in *Fields*, (which I have practiſed ſucceſsfully) is thus, When you ſcower a *ditch*, and cut down or plaſh an old *quick-hedg*, then ſet a *row of Trees* within a yard of the hedg on that ſide that is not ditcht,

and

and fence them with half round *tumps* only on the one ſide, for the hedg will ſecure them on the other; and from the cut or plaſht hedg, you will commonly have Thorns and Briers enough for the *mounds*, to fence it as hath been before directed; and at the ſame time, or in Summer, draw ſome of the *quick thorns*, *hips*, or *briers*, from the hedg into the fence, about the *tump*, which will contribute to the ſtrengthening and preſerving the dead fence you had made about it before, ſo that you may be free from trouble about it for ever after.

There are theſe advantages in this way of Planting.

1. The ditch on the outſide the hedg, drains the ground and makes it healthful. *Benefits hereby.*

2. The ground near the hedge, is commonly very rich, as not having been impoveriſhed by Tillage, but improved, ſometimes by the oft ſcouring of the ditch, and commonly with the dung of Cattle that for ſhelter, ſhade, or foder, repair much thither.

3. It's not the leaſt hindrance to plowing, or graſs, for the *hedg* when it's grown up, uſually beareth out as far as the *tree* is ſet in the *field*.

4. And

4. And this is much better than *planting* in the *hedg-row*, as many do; for in the *hedg*, when the tree is grown to have a large top, it's apter to weaken the hedg under it; but theſe being ſet a little diſtance from the *hedg*, and growing (as they will) with the greateſt part of their *heads* from it, will not damage it.

5. The Fruit will be gathered with much more eaſe, than of thoſe that are planted in the hedges.

6. They will not be choakt, or hurt by the hedg when it's grown up, but be good handſome, fair Trees.

Diſtance. You may ſet theſe at *eight* yards diſtance, or nearer being but one ſingle *row*, and ſo if but half a field (as uſually it falls out) have the ditch on the outſide, you may ſet a conſiderable number, and find advantage, without damage, and with inconſiderable charge, eſpecially if the ditch ſtand on the *North*-ſide; if you can therefore, chooſe ſuch hedges.

Where not good. This is not to be practis'd near hedges that are full of great wood, or trees; but if there be but few trees, it's but leaving a vacancy near ſuch trees, and ſetting your *fruit-trees* againſt ſuch places where there grow none in the hedge.

Sect. 6.

Sect. 6. Another way of *planting* in *Fields* is this, If you would Plant without any charge of fencing, you may do it in your Hedges; theſe Trees muſt be well grown, and ſtrong, that the hedg choak them not while they are young: And when you plaſh, or cut down a quick hedg, obſerve no certain diſtance, but as it happens where you find it moſt free from *quick*, ſet a *tree*, and encloſe the body in the *hedg*, but bind not the *Etherings* too cloſe about it, leſt they gall it, and as it groweth, obſerve what Thorns annoy it and cut them off. IV. *In Hedges.*

Sect. 7. If you have a mind to ſet any *Cuttings* of *Gennet-moils*, or other *Apple-trees*, that grow of *Cuttings*, they will proſper very well in, or rather near a hedg; becauſe generally there, the *mold* is looſe and mellow for them to put forth Roots in, and ſomewhat enricht by the frequent cleanſing of the ditch: If you plant them near the hedg, you muſt a little fence them on the one ſide, as by the *third* foregoing direction; but the *tumps* you raiſe to ſet the thorns in, muſt not be above a foot high, for the *cuttings* will ſhoot out their *roots*, almoſt to the top of the Earth about them, and a high *mound* falling down by degrees, V. *By Cuttings.*

ſome of the beſt *roots* may be left bare, or very little Earth upon them.

Of preparing them. The way of preparing *plants* for this purpoſe, is by *circumpoſition*, &c. as is directed in the *Chapter* of *Dwarf-trees*.

Choice and ordering. Make choice of *Cuttings* or *ſtems*, as big as a mans wriſt (if you can) towards the lower end, before you ſet them, *prune* them out of the reach of Cattle, and leave but little *top* on them when you ſet them, neither let them be very long: If the tops be out of the reach of Cattle, it's enough.

VI. *By long Crab ſtocks.* *Sect.* 8. There be ſome that get long *Crab-tree-ſtocks* out of *woods*, or elſe dreſs ſome up in their *Nurſeries*, to grow tall, and ſet them in their *fields*, or *hedges*, and at *three* years ſtanding *graff* them; *Advantage* which may do well, and is the better approved of, becauſe there needs no removal after they are *graffed*; but ſome inconvenience there is in this way: *Diſadvantage.* The long *ſtocks*, out of *woods*, being commonly very old, their bark *thick*, their *roots* big, they thrive but indifferently; and thoſe raiſed in *Nurſeries* will ſeldom be *taper* grown, or *ſtrong* enough to bear a large *top* well, after they are *graffed* ſo high as they ought, being ſet in fields: You will alſo be longer in raiſing

ſtocks

ſtocks to that height, and any conſiderable ſtrength (as is neceſſary for this purpoſe) than in raiſing trees, if your *ſtocks* be *graffed* young in your *Nurſery*, becauſe they thrive more after *graffing* than before.

And in both caſes if you *graff* them high, the *ſtocks* will be continually putting forth *ſprouts* of their own kind below the place they were *graffed* at, which will require frequent cutting off. If you *graff* them not very high, you will find it difficult to defend them from the nipping of Cattle, and from the *Cyens* being broke out of the *ſtock* by ſome caſualties or other, to which they are more expoſed in *fields* that lye common to Cattle, than Nurſeries that are incloſed.

Sect. 9. The laſt way I ſhall ſpeak of, is that which is moſt uſed in the *planting* Countries, and that is, by *graffing* ſuch *Crab-trees*, as grow in the *hedges*, or grounds, and this is the ſpeedieſt way to have *fruit*; becauſe the big Trees have bodies already, and in *four* or *five* years time (well ordered) will have good *tops* to bear; and if you *graff* ſmall *ſtocks* in your ground that have grown of their own accord there, and fence them, they will ſpeedily bring on *graffs*, being ſo well rooted.

VII. *By Graffing old Crab-trees.*

A miſchief uſed herein. I have ſeen many cut off the *tops* of old *Crab-trees* and *Apple-trees*, and *graff* the *body* or *trunk*, but the *Cyens* could never cover the heads of thoſe *ſtocks*, and by that time the *top* was a little grown up, the body was ready to periſh with rottenneſs.

Neceſſary directions. The beſt way for big *Crab-trees* (or if you would change the kind of any *Fruit-trees*) is to *graff* them in the *boughs*, where they are not bigger than a mans arm, making uſe of none but thoſe that grow handſome, at convenient diſtance one from another, cutting off the *others* ſmooth and even, cloſe to the body of the *tree*.

To do this, that Winter that you *cut*, or *plaſh* a *hedg*, order the work-men to trim up, but not to lop or top the *Crab-trees*, unleſs it be the *tops* of the *boughs*, half a yard or more, above the place you intend to *graff* them at, and then in *March* following, ſaw off the *heads* at proper places, and *graff* them.

Of graffing thoſe in the cleft. Many are for *graffing* theſe in the *cleft*, becauſe they think the *Cyen* hath better hold, and will not be ſo ſubject to be broke out by the wind, as thoſe *graffed* in the *bark*; but I have ſeen thoſe in the *cleft* broke out by the wind, neither could

could I ever find that the wood of the *Cyen* in the *cleft*, did ever cement with the wood of the *ſtock*, but only on the out-ſide as the others do: And thoſe in the *cleft* are not ſo apt to grow all of them, nor to make ſo great a growth as thoſe in the *bark*; which with a little warineſs may be preſerved from danger of *wind*, and full as much care muſt be had about thoſe *graffed* in the *cleft*, if you will preſerve them all from the ſame prejudice. *In the Bark.*

I have been uſed to obſerve the following difference in *graffing* theſe great boughs from all the forementioned varieties of *graffing*, and look upon it as a thing well worthy to be taken notice of and obſerved. *Difference to be obſerved.*

When you have prepared the *Cyen*, as you are directed to do, when you *graff* in the bark, apply it to the place you deſign to put it in, and *ſlit* the *bark* of the *bough* through, on both ſides, the *Cyen* cloſe to it, beginning at the top of the *bough*, and not carrying the *ſlits* much above half the length of the *ſlope* of the *Cyen*, ſeparate that little portion of the *bark* between the two *ſlits*, from the wood with your inſtrument, thruſting it a little lower than the *ſlits*, to let *In ſlitting the bark.*

in the *Cyen* as far as it is ſloped, and then ſtick the *Cyen* in, having firſt taken off from the edges of the *Cyen* any unevenneſs (not cutting through the bark) that all may the better fit together; and you may put in *two*, *three*, or *four Cyens* in every head, having reſpect to the bigneſs of it; or you may in the biggeſt put in two *Cyens* in the *cleft*, and two others in the *bark*, doing one of the later on the *Weſt*-ſide of it, for then the *wind* blowing it towards the head, is not ſo apt to break it out, as if it drave it from the head; bind the heads, and *clay* them as you heard before, and continue ſo to do yearly till the *heads* are almoſt covered.

Of preſerving them from injuries.

At the *firſt claying*, ſtick in *feathers* or long *eſcures*, to prevent birds lighting on the *Cyens*.

In *July* following (whether you *graff* theſe big *ſtocks* in the *cleft* or *bark*) pick off moſt of the leaves of the *Cyens*, and cut off ſuch *ſprigs*, as growing inward will make the head *thick*, and all *ſtraggleing out-boughs*, that the *wind* may not have ſo much force upon them, to break the *branches* out of the *ſtocks*.

Of praning the Stock.

Cut off alſo ſome of the biggeſt *ſhoots*, the *Crab-tree* puts forth of its own kind; but

but for the first three years you must not cut off all, lest the Tree not having liberty to vent all the sap that cometh up, furfeit and dye, the small *graffs* not being able to receive near so much sap, as the old top did the year before.

Thus many Country-men when they take off the whole *head* of an old *Oak*, have sometimes found it dye; and therefore in some Countries they leave one *big bough* to grow for one year, to draw up the sap, (as they term it) whereas it is indeed that the sap may have liberty to vent it self; for Trees that have a thick *bark*, as *old Oakes* have, when all the small *boughs* are cut off, are long in putting forth *branches*; and difficultly at last put forth so many, as will spend the sap which comes up the Tree in some proportion, to what it did the year before, when the whole top was on; which sap being chiefly in the greatest channel, betwixt or near the *bark* and out-side of the body of the Tree, and not being *vented*, is either dryed or consumed by the heat of the Sun, or putrifies for want of that *continual motion* that is in it, when it hath vent, that several trees dye of this disease; and when trees dye this way, the

bark will drop off from the body of them ſooner by ſome years than otherwiſe.

Hence it is that you may kill a Tree, by lopping off the whole *top* in the *Summer* time, or ſo much of it, that the remaining *boughs* cannot receive all the *ſap*, but lieth choakt up for want of iſſue.

The ſecond *Summer* you ought to bind ſome *hay-ropes* about the lower part of the *Cyens*; I have not ſeen need of repeating this the *third Summer*, but if done it will the more certainly ſecure them from breaking by the wind.

And thus I have ended what I had to ſay of *Field-planting*, and haue been the more large in it, becauſe I have not ſeen it any where elſe taught without much imperfection, and many defects; and indeed not much more than mentioned, rather than treated of.

CHAP.

CHAP. XII.

Of the annoyances about Fruit-trees.

SECT. 1. The nature of the *ſoil* is the chief cauſe of *Moſs* and *Canker*, and therefore without altering the *one*, you can ſcarce prevent the other; However you may ſcrape or with a *hair-cloth* rub the *moſs* off, after rain, or (as ſome ſay) burn it with a bottle of ſtraw under the Tree. *Of Moſs and Canker.*

All *Canker*, *filth*, and *worms* muſt be picked clean off, and bind ſome *clay* well mixt with *hay* about the *canker'd* place: If the Tree grow but poorly, which is for the moſt part cauſed by the ill temper of the *ſoil*, open the ground about the *roots*, and put in ſome *manure* proper to cure it.

Slitting the *bark* is an excellent additional help to moſt of the aforeſaid evils, and alſo for *bark-binding*, ſome adviſe that the *bark* be cut according to the *grain* of it, as in *Apple-trees*, *Pear-trees*, *&c. ſtraight* down; in *Cherries*, *&c. round* about the Trees. *Bark bound.*

But I have found in the ſame land, ſome *Some Trees proſper where others will not.*

ſome kinds of *Fruit-trees* very ſubject to ſome of theſe *evils*, and others proſper very well; when once you diſcover this, (becauſe it's utterly in vain to make ground and trees, of different *genius* agree together) you muſt make it your buſineſs by degrees, to change your Trees, till you have left none againſt which your *ſoil* beareth ſuch an implacable hatred, and furniſh it with ſuch as will flouriſh, and be fruitful.

Bark gallid. If any of your Trees are *galled*, by being bound to *ſtakes*, or by *thorns*, or otherwiſe, lay ſome *clay* upon the gall'd place and wrap *hay-bands* about them.

Dead tops. Big *Plants* alſo, that upon their removal have had their *tops* cut off, are apt to dye from the place they were cut off at, to the next *ſprig*, or *branch* upon them; theſe dead parts ought to be cut off cloſe to the next good *twig* or *ſhoot*, and covered with *clay*, as in *graffing*, that the head may be well grown over, by ſuch *twig* or *ſhoot*, and the wet prevented off getting into the *pith*, to the damage of the Tree.

Hares and Conys. *Sect.* 2. *Hares* and *Rabbets* are very miſchievous to *Nurſeries*, and young *Orchards*, by peeling off the *bark* of the *Plants*: If your fence be a wall, or cloſe pale,

pale, or water, there's little danger of them; but becauſe ſuch fences about *Orchards* are rare, and no other can keep them out, ſome expedient muſt be made uſe of.

Some have uſed *Hay-ropes*, bound about the Tree, from the ground to a ſufficient height; but this were endleſs in a *Nurſery*, it may be done in an *Orchard*; but there are other ways to be preferr'd before it. *Hay-ropes.*

Others therefore *dawb* the bodies of the Trees over with *Tar*, which being uſed alone, endangers the life of very young *Plants*, and extreamly hardens the *bark*, and otherwiſe hurts them, which evil is prevented by mixing the *Tar* with any kind of Greaſe, and boiling them on a fire, ſo as both may incorporate, then with a bruſh, or little broom, daub over the body of the Tree, as high as a *Hare* or *Rabbet* can reach; and if this be done in *November*, it will preſerve the Trees for that whole year, with that once doing, it being the *winter time* only that they will feed upon the *bark*. *Tar.* *Tar and Greaſe.*

Some uſe Greaſe alone, and then it may require to be laid on *twice* in a Winter. *Greaſe.*

Some

Mans dung. Some thin ſtuff out of a *Houſe of Office*, or the thick tempered with water, and bruſh't on, once in a Winter hath been often uſed with good ſucceſs.

Piſmires. *Sect.* 3. If you find *Piſmires*, or *Ants* breed about, or near the *roots* of any of your Trees, caſt away the Earth they lodge in, and ſupply its place with ſome *ſtiff clay*; if they breed diſtant in ſeveral places, ſome direct to dawb the Tree about with *Tar*, that their feet may be taken in it; but you heard already that's prejudicial to young Trees; but if they peſter you extreamly, and your Tree be young, you may bind a ſingle *liſt*, or *ſhread* of *Cloth* about it, and once aweek (when *buds* and *bloſſoms* are putting forth, for that is the chief time they prejudice them) *dawb* the *Cloth* over with *Tar*.

Moles. *Sect.* 4. *Moles* are to be kill'd, eſpecially in Seed-plots and Nurſeries; Spring-traps, or Box-traps are beſt to deſtroy them, not eaſily deſcrib'd, but are now know almoſt generally.

Water-rats. I have heard that *Water-Rats* will ſpoil a whole *Nurſery*, getting through *Mole-holes*, and barking or eating the young *roots:* I found ſeveral roots once ſo ſerved; and it being near a *Fiſh-pond*, I ſuſpected

ed it was done by them; but finding alſo a *Snake* in a hole among the Roots, I knew not whether that might not be the Enemy. *Snakes.*

Eſts, or (as ſome call them) *Askers*, are alſo ſaid to be pernicious to Trees; but theſe three laſt accidents are ſo rare and inconſiderable, that it's needleſs to labour much about remedies againſt them, only as men find them to deſtroy them. *Eſts, or Askers.*

Sect. 5. The greateſt prejudice to *fruit*, is by *blaſtings*, *froſts* immediately ſucceeding rain, *Caterpillars*, or *black Flies*, that eat up *buds*, *leaves*, and *bloſſoms*: There's one way uſed to help in all theſe caſes, for *Orchard fruit*; but I know not how it ſhould be uſeful for any but the laſt two, for which I dare commend it: And that is, that when in the Spring you perceive theſe *Caterpillars*, or *Flies* appear, make fires of ſomething that will ſmoak, ſo near the *Orchard*, and in ſuch places that the wind may carry the *ſmoak* as much through the Trees as may be. A thing frequently uſed is *Hemp-ſheaves*, (as it's called) being the ſtalk of the *Hemp*, when the *tow* is ſeparated from it, and its certainly very good; but bad *Chaff*, *wet Straw*, or *moldy Hay*, or any thing of that nature may ſerve turn. *Blaſtings, Caterpillars.* *Smoak.*

Snails

Snails. *Snails* are pernicious to *Wall-fruit*, therefore deſtroy as many of them as you can, when they are beſt to be diſcovered, which is early in the morning.

Cover wall-fruit. And to preſerve your *Wall-fruit* from *blaſting winds* and *Froſts*; it will be neceſſary to cover them in the *nights*, and *cold* days by hanging before them *Matts* or *Blankets*: ſome ſtick *branches* of *broom* before the *bloſſoms* and young tender *fruit*.

Birds. To preſerve *ripe fruit* from *birds*, ſpread an old *Net* before the *Wall-fruit*, or upon the *Dwarf-trees*.

CHAP. XIII.

Some particular Rules about ſome kinds of Fruit-trees beſides the general rules already mentioned.

Of Vines. SECT. 1. *Grapes* ſeldom or never ripen well in this *Iſle*, without help of art and induſtry, to which purpoſe take theſe directions.

1. To *plant* ſuch as ripen ſooneſt in the year, that they may have as much of the

the *ſummer* heat at *ripening time* as may be.

2. Let the wall you plant them againſt, be a full *South*, or but a little inclining to the *Eaſt*; or if you have a *half-round*, or corner in a wall, or the back of a brick Chimney, make uſe of ſuch places for them.

Of low walls.

Vines will proſper well againſt a *high wall*, yet that is not altogether ſo neceſſary but that *low walls* may ſerve turn, and the higher may be reſerved for ſuch *fruit-trees* as will not do well without them: That of a *Tarras-walk* may do well for *Vines*, and the *gravel-walk* under the *wall* will mightily encreaſe the heat about them.

Narrow places in Walls.

If you plant any *Trees* againſt your *dwelling Houſe-wall*, there may be ſome narrow places between two Windows, or the like, where other *fruit-trees* have not room to ſpread: A *Vine* may grow up there, and above thoſe narrow places enlarge it ſelf where ever it meets with room.

Betwixt Fruit-trees.

You may alſo plant a *Vine* betwixt every *fruit-tree* that groweth againſt your *hotteſt walls*, and let it ſpread a little in the *Summer* time into the *Fruit-trees* on either ſide, eſpecially if the *fruit* of ſuch

Trees

Trees uſe to be early ripe, or that they bear little Fruit, or have not been ſo long ſet as to have covered the *wall*. And though ſuch *Vines* cannot extend themſelves to that bigneſs, as thoſe planted where they have more room; yet by this means you will make advantage of ſuch portions of your wall, as otherwiſe you could have had little benefit from.

Proper Soil. *Sect.* 2. The beſt ground for them is that which is *rich* and *dry*, inclinable to *ſtony* or *gravel*, ſo it bind not; the beſt *dung* to fatten the Earth they grow in is *Horſe* or *Sheeps dung*: Make bare the *roots* in the beginning of Winter, and throw in plenty of the ſame *dung* moſt Winters.

way of propagating. The beſt way of propagating of them is, in *November* to lay a *branch* of that years growth into the Earth, under the old Tree, without cutting it off, lay as many *joynts* or *buds* in the Earth as you can, leaving but *one* or *two* out; for it puts forth its *roots* chiefly at the *joynts*; at a years end or in the *February come-twelve-month* cut it off from the old one, and *plant* it where you deſign it ſhould grow, lay it in the Earth in the ſame poſture it lay in before, and alſo lay ſome of the *buds* of the *new wood*, that

that grew out ſince it was firſt laid down, that it may gain the more *roots*, leaving out of the ground again not above *one* or *two buds*.

You may chance to have ſuckers of an old Vine which will be ſure to grow. *Suckers.*

Or you may take *Cuttings* of *Vine branches* of that years growth, and ſet them in good *warm looſe* land, and many will grow; if it be in the place you intend they ſhall always ſtand in, next *year* lay down a part of that which hath grown out, to root alſo, or elſe upon removal lay in the new growth all but a *bud* or *two*, with that part which is already rooted; If it have made but ſmall growth the firſt *year*, lay part of the ſecond *years* growth in the ground, it will more advantage them by helping them to good *roots*, than the loſs of a *year* or two's growth in the top will amount to. *Cuttings.*

If you have an old *Vine*, that beareth not well, lay down in *February*, or *March* ſome of the ſtrongeſt *branches* of the foregoing *year*, (that grow low) in the *mold* under the old *Tree*, without cutting them off, leaving out of the ground a *bud* or *two* to grow, and your *wall* will quickly be furniſhed with new, *Cut an old Vine.*

and freſh *branches*; ſo that by degrees you may cut off many of the old *branches* of the *Vine*; for though one Vine may cover abundance of walling, yet three or four *roots* in that compaſs will ſtrengthen it the more to bear.

Of pruning. *Sect.* 3. As *Vines* ſtand in more need of *pruning* than other *Fruit-trees*, ſo great care is to be taken in the performing of it; when you have ſet your *Vine*, as you have been before directed, ſo that not above two *buds* of it remain above ground, you are to nail up ſuch *branches*, as grow forth up to the *wall*, till it have overſpread as much *wall* as you deſign for it, ſuffering not above two *branches* to grow from the ground, and ſnipping *yearly* the *tops* of the *branches* a conſiderable length, as far as they are *weak* and *tender*, and alſo all ſmall *poor ones*, cloſe to the body, unleſs the well liking *branches* be but few, and then you may leave the loweſt *bud* of ſome of them, to grow forth next year, and this you are to do towards the end of *February*, or beginning of *March* yearly.

When your *Vine* comes to bear, you are to uſe your knife about it three times in the year.

Time. 1. In *February* or the beginning of *March*

March you are to *prune* off part of the foregoing years *ſhoots*, where they are too thick, cloſe to the old *wood*. As it enriches your *Vine* to keep it thin of *branches*, ſo you muſt take care it be well ſtor'd with *buds* againſt the ſpring following, for it bears *Grapes* only on the *new ſhoots* of every year; and in cutting off theſe *branches*, you muſt take care your wall continue furniſhed with ſuch branches as may be ſpread upon the wall regularly and decently, not thick in one place and thin in another, nor croſſing one another.

2. The next time to take off ſuperfluities from your *Vine*, is about *Midſummer*, when the *Grapes* are knit, clip off then the end of the *branches* that have *Grapes* on them, a little above the *Grapes*, that they may have the more nouriſhment, and keep them nail'd to the *wall*, as alſo barren branches where the wall needs them.

3. The laſt time of cutting is in *Auguſt*, for then becauſe *leaves* and *branches* may be ſo thick, as to keep the heat of the Sun from the *Grapes*, which is neceſſary to ripen them, you may pluck off ſome of the leaves, and cut off ſome of the *branches* to open way for the *Sun* to come to them.

Place. There's one thing to be obſerved in the *pruning* theſe peculiar to it, That whereas others are cut at a *bud*, the branches of theſe muſt be cut off near the midſt, betwixt two *buds*, and that not later in the year, than the beginning of *March*, for afterward the *ſap* or *juice* will run out, and the *Vine* will be much *Bud.* weakned by *bleeding*: You will by that time alſo ſee what the *Froſt* of the *Winter* foregoing hath kill'd, which muſt be taken all away.

Froſts. If Froſts come before any *Grapes* are ripe, defend them in the night time with *Tilts* or *Mats*.

Vineyard. *Sect.* 4. It's ſcarce worth while to have a Vineyard here in *England*; there having been many, and now ſo few, affords a ſtrong Argument to prove that attempts of that kind never turn to account: The uſage of the *People* in ſuch caſes being of no ſmall *authority*.

It's poſſible that perſons that have very warm ground, well ſituated, with care and induſtry, may ſome years have good *Grapes* without the benefit of a wall. I have ſeen, not far from *Briſtol*, in a year that was very favourable to them, Grapes ripen well without ſuch help.

Sect. 5.

Sect. 5. *Fig-trees* ought to be *planted* in a very warm place, againſt a *wall*, defended from the *North* and *North-Eaſt* wind; every old Tree will yield plenty of *ſuckers*, fit to raiſe new ones. *Fig-trees.*

Sect. 6. You have ſeen the way of raiſing *Quince-trees*, in the *Chapter* of *Dwarfs*; I ſhall here only add, that if you have a part of a Tree, that groweth ſo low, that you can bring it to the ground, either by plaſhing or otherwiſe, you may do it in the beginning of *Winter*, and cover it all with Earth but the ends of the branches, and let it continue ſo one year, and then uncover it, and every twig will have put forth *roots* in the Earth, which being cut off and *tranſplanted*, will make you a *tree*. *Quince-trees.*

And this is the way of propagating of *Fruit-trees* by *layers*; and you may here take notice, that all ſuch Trees that may be propagated by *Cuttings*, may be raiſed likewiſe by *Layers*, and this way takes more ſure than by *Cuttings*. *Layers.*

Quince-trees delight in a *moiſt rich* Land; near ſome gutter that carries away the ſoke or waſh of a *Dunghil*, or *Houſe*, is a place uſually choſen for them, and is ſuch as they like very well in. *Soil.*

Medlar-tree. *Sect.* 7. *Medlars* are raiſed by *graffing* on the *Pear-tree*, *Crab-tree*, *White-thorn* or *Service-tree*, the laſt is the beſt, and the *White-thorn* by much the worſt.

Service-tree. You may get *Plants* of *Services* out of woods, where they grow wild, from which you may raiſe *Service-trees*, or *ſtocks* for *Medlars*, or if you can get none ſuch, *graff* the *Service* on the *Wickey-berry-tree*, or the *White-thorn*.

Wallnut-trees. *Sect.* 8. *Wallnut-trees* are much *Planted* of late, and are very proper for *walks* in grounds and a good fence to ſhelter Buildings and *Orchards*; the *fruit* is uſeful, and very profitable if you can ſpare any to ſell, or for Oil for Painters if the market ſhould be glutted with them; and the Timber ſo excellent for *Tables*, *Chairs*, and *Stools*, *ſtocking of Guns*, &c. that it goes off well, and takes a good price.

way of raiſing. They are raiſed by *Nuts*, gathered from the ſame Trees, if you can let them have their green *husks* on them, for the bitterneſs thereof will defend the *kernels* from being eaten by *worms* before they ſpring up; but you muſt chiefly reſpect their full ripeneſs, at which time they are apt to ſhed their *husks:* You may either ſet them as they come immediately from

from the Tree, or keep them in the ſand till *March*.

Set them in *rich dry warm* Land, and when you *tranſplant* them, ſet them as ſpeedily as you can after taking up, and cut off little of the *roots*, but by no means the *tap* or *heart-root*, (as in other Trees) and top them not at all if you can help it; but if the Tree be ſo *tall*, *crooked*, or *dead* at the *top* before removal, that you muſt put a *peg*, or ſome ſoft *wax* into the *pith-pole*, or cover the *cut* with *clay*, that wet may not get in, and make it dye downward, becauſe theſe Trees have a large pith; when you *do* cut off the *top*, do it, if you can, at a *ſide branch* or *ſprig*, and that will ſpread under the *clay*, and cover the *tops* again. You may cut off many *ſide branches* when you *tranſplant* them. *Soil and tranſplanting.*

No Cattle will *brouze* or *peel* them, by reaſon of their bitterneſs; ſo that a fence that will preſerve them from Cattles rubbing againſt them is ſufficient. *Fencing.*

They will grow well in a *looſe*, *gravelly*, *ſtony*, or almoſt *rockey* land, and beſt where they are at firſt ſet without being removed; to which end you may in ſuch a *hillock* as is ſpoken of in *Field-planting* (but not ſo broad nor ſo high) *Soil.* *Plant without removal.*

ſet *three*, or *four Nuts*, or more, and about *two* years after they are grown up, pluck up gently all but *one* of them, that is likely to make the beſt *Tree*.

Cheſnut-trees.

I have ſeen *Cheſnut-trees* grow in *England* to be very large, and bear good *Fruit* on a *hot*, *dry land*; They are excellent for a *defence* from winds, and better than *Walnut-trees*, but of much ſlower growth. It's not good to top them, as ſome do when they *tranſplant* them.

Way of raiſing.

They are raiſed by ſetting *Nuts*, that are come *freſh* from beyond Sea, at the end of the year; or from good *Nuts* well ripened in *England*, which you may ſet with the *husks* on, when they are fallen, or rather kept in Sand till the great Froſts are over: Theſe Trees grow beſt likewiſe without being ever removed; ſome ſay they will grow well being *graffed* upon *Oakes*, *Beech*, or *Walnut-trees*.

The *Horſe-Cheſnut* groweth of Layers, and makes delicate Trees for *Avenues*.

Filberds, Nuts.

Filberds and *Hazle-nuts*, worthy to be *planted* in *Orchards*, or *Gardens* are raiſed from *Nuts* ſet in the Earth, or *Suckers* from the *roots* of an old Tree, or may be *graffed* on the common *Hazle-Nut*.

Sect. 9.

Sect. 9. *Mulberry-trees* are raiſed by *Suckers*, *Layers*, or *Cuttings*.

Gooſberries, *Currans*, *Barberries*, and *Raſberries* are raiſed by *Suckers*, of which you may have plenty about the *roots* of old Trees. *Gooſberits, Currans, Barberits, and Raſberrits.*

When they have grown ſome years, ſuffer not many *ſuckers* to grow about them, nor cut the *tops* to a round cloſe buſh, as many *Gardeners* do; whereby they grow ſo *thick*, that they neither *bear* nor *ripen* their *Fruit* ſo well as if they grew *taller* and *thinner*.

CHAP. XIV.

Of the ſeveral kinds of Fruits.

SECT. 1. As to *Wall-fruit* and *Dwarfs*, if the *Planter* have convenient room, he ought not only to have *one*, or *two* Trees of each good kind, but alſo ſome of that which is but indifferent, that is ripe, or will keep good at ſuch time, when better *eating fruit* is not to be had; and more of laſting *winter fruit* than of *ſummer* or any one ſort. *Of choice of Fruit-trees.*

Sect. 2.

Of Peaches. *Sect.* 2. Of *Peaches* the firſt and ſooneſt ripe is the *White-Nutmeg*, next to that the *Red-Nutmeg*, next to that the *Troy* which is ripe almoſt aſſoon and a better Fruit; next ripe are

The { *Izabella*, *Savoy*, *Early Newington*, *Burdeaux*, *Old Newington*, *Violet-Muſcat*, *Perſian*, *Modena*, *Morello*, *Rumbullian*, *Scarlet*, *Bellice*, *Royal* } Peach.

Theſe are accounted excellent kinds of *Peaches*, and there are many other good *ſorts* beſides theſe; and ſo there are of *Apples*, *Pears*, *&c.* more than I have mentioned in this tract; for I think it not neceſſary to trouble either the *Reader*, or *my ſelf* with them here, but only to mention ſome *choice Fruit* of every kind, and leave every one to pleaſe his own fancy, and ſtore himſelf with them,

them, or others, as he approves them and hath convenience ſo to do.

Sect. 3. The beſt *Nectarines*, are *Of Nectarines.*

The { *Red-Roman*, *Murry*, *Tawny*, *Paper-white* } *Nectarines.*

There are others though worſe ſorts, as

The { *Yellow*, *Painted*, *Ruſſet*, *Red* } *Nectarines.*

The *Algiers* is commended by ſome, becauſe it parts eaſily from the *ſtone.*

Sect. 4. Amongſt *Apricocks* the *Algier* and *Maſculine* are firſt ripe: The *Turkey* is much commended, ſo is the *Orange*, the *white Apricock* is alſo accounted better than the common. *Of Apricocks.*

Sect. 5. *Plums* to be preferred before others are as follow; The *red* and *blew Primordian* as being firſt ripe, though not ſo good Fruit as ſeveral following; *Of Plums.*

The

The next ripe,

The { *Morocco*, *Merabolen*, *Violet*, *Apricock*, *Barbary*, *Black and Green Damaſcene*, *Prunella*, *Queen Mother*, *Kings*, *Matchleſs*, *Black-Pear-Plum*, *Peſcod*, *Bonum Magnumque*, *Cheſton*, *Marbled*, *Imperial*, *Nutmeg*, *Turkey* } Plum.

Theſe you may ſet to a *wall*, though moſt of them will bear well, being *Dwarfs* or *Standards* if you have not wall enough.

The *White-pear-plum*, *Prune*, *Damſons*, and *Verdock*, are good *Preſerving Plums*.

The

The { *Muſcle* / *Wheat* / *Lammas* } Plum, { *Bullice*, / *Damſons*, }

and ſeveral *courſe Plums* are raiſed by *Suckers*, without *graffing* or *inoculating*, and may be ſet in *Orchards*, *Hedges*, or any common places.

Sect. 6. The *May Cherry* is firſt ripe, and ſhould have a good wall to expedite its ripening, for though they are but ordinary *Fruit*, yet their earlineſs makes them a rarity. Next ripe are *Of Cherries.*

The { *Duke* / *Flanders* / *Red-heart* / *Lukeward* / *Bleeding-heart* / *Spaniſh-black* / *Naples* / *Carnation* / *Amber* } Cherry.

The great bearing *Cherry* of *Millain*, and *Morella* are *blackiſh* when ripe and *blood-red* within, excellent to make *Cherry Wine*, affording a ſtrong and vinous liquor.

Theſe two laſt and the *Prince-Royal* are good to Preſerve.

If

If you have not room upon your *walls*, theſe will bear well in any warm place, *planted* as *ſtandards*.

Thoſe that you find put forth *ſmall twigs*, and have a *ſmall*, *dark*, *green leaf*, are eaſilieſt kept *Dwarf-trees*.

Of Grapes. *Sect.* 7. The firſt ripe *Grapes* are the *ſmall Black*, or *Cluſter Grape*, next the *Muſkadine red* and *white*, the two ſorts of *Frontiniack*.

The { *Muſcat*, *Grape de Arbois*, *Raiſon of the Sun*, *Red Orleance*, *Burlet*, *Parſley* } Grape.

Of Pears. *Sect.* 8. *Pears* are of very many kinds, and are much improved by being Planted againſt *walls*. In *France* they are accounted among their beſt Fruit, and the beſt kinds do well deſerve it.

The *Summer* and *Winter-Bon-Criſtien*, growing pendent, are fitter for a *wall*, than to be Planted of *Standards*, the *Winter* will keep till *May*, and is a very choice *Pear*.

The

The { *Bury de Roy*, *Violet*, *Dove*, *Great-Musk*, *Amadote*, *Rouſſellet*, *Meſſier-Jaen*, *Great-Soveraign*, *Blood*, *Windſor*, *Green-field*, *Dionier*, *Great-Burgamot*, *Virgalous* } Pear.

Double-flower'd keeps till *May*, not fit to eat till *March*. Theſe do well *planted* againſt a *wall*: If you have not *wall-room* enough, ſuch as grow with *ſmall twigs*, or almoſt any, *graffed* on *Quince-ſtocks*, may be kept *Dwarfs*.

The *Winter* and *Summer Burgamots* may alſo make *Dwarfs*.

Meat *Pears* for *Standard-trees* in common *Orchards* are ſuch as follow, both for *Summer* and *Winter Fruit*.

The

The Pear.

- Hill
- Primating
- White and Red Geneting
- Green-Chiſſel
- Pearl
- Soveraign
- Orange
- Katharine
- Anthony
- Sugar
- Pimp
- Berry
- Popering
- Deadmans
- Scarlet
- Prick
- Royal
- Nonſuch
- King's
- Ladies-buttock
- Muſcat
- Oak
- Virgin
- Ice
- Gaſcoin-Burgamot
- Winter Popering
- Little Dagobert
- Great Kair ville
- Long Burgamot

With

with divers others, each *Country* affording variety.

The *Slipper* and the *Lewis Pears* are good to dry.

In *Fields* you may ſet *Baking Pears*, and *Perry-Pears*.

For Baking.

The { *Norwich*, *Black Worceſter*, *Quince-pear*, *Biſhops*, *Arundel*, *Bell*, *Painted* } Pear.

Alſo *Wardens* of ſeveral ſorts very good.

For Perry.

The *Red* and *White Horſe Pear*. There are alſo divers other *wild* or *Choake Pears*, whereof the *red*-coloured yield the ſtrongeſt *liquors*. The *Bosbery*, and *Bareland Pears* are by much the beſt I have known or heard of: and the Tree of the firſt of theſe two kinds groweth to that bigneſs, that it will bear *fruit* to make *one*, *two*, or *three Hogſheads* of

Perry in one *year*: I could tell you ſeveral *ſtories* to ſet forth its excellence when it's *two* or *three* years *old*. The *tree* will proſper on almoſt any baſe *Land*.

Of Apples. *Sect.* 9. *Apples* are ſeldom planted againſt a *wall*: A man had beſt furniſh himſelf with the choiceſt of theſe following, for *Table-fruit*, by making them *Dwarfs* in his *Garden*, or *larger Trees* in a ſecure *Orchard*, being tempting Fruit, and ſome of them early ripe.

The { *Juniting*, *Flax*, *King*, *Margaret* or *Magdalen*, *Golden Ruſſeting*, *Spice*, *Summer Queening*, *Go no further*, *Royal*, *Golden Pippen*, *Good-Huſwife*, *Giant*, *Pomewater*, *Summer Pearmain*, *Bellaboon* } Apple.

There

There are alſo ſome of ſpecial account in their reſpective Countries;

The
- *Stocken Apple* in *Herefordſhire.*
- *Darling* in *Cheſhire.*
- *Golden Rennating* in *Hartfordſhire*, &c.
- *Angels-bit* in *Worceſterſhire.*
- *Kirton Pippen* in ſome part of *Northamptonſhire.*
- *Harvy-Apple* in *Cambridgſhire.*

Theſe next following are good *Winter Apples*, or ſuch as may be *planted* in *Orchards.*

The
- *Winter-Pearmain*
- *Winter-Queening*
- *Quince-Apple*
- *Nonſuch*
- *John-Apple.*
- *Leather-coat*
- *Winter-reed*
- *Golden Doucet*
- *Lones Pearmain*
- *Weſtbury*
- *Pome-Roy*
- *Lording* hath little Core
- *July-Flower*
- *Pear-Apple*

} Apple.

The { *Flower of Kent*, *Parſly*, *Winter-Cheſnut*, *Maligar*, *Red-fennel*, *Short-tart*, *Ruſſeting* } Apple.

There are divers kinds of *Pippens*, I have heard of *eighteen* ſeveral *ſorts*, thoſe of them I know are ſo good, I can ſcarcely tell which to prefer.

There are alſo ſeveral ſorts of *Renatings*, very choice good *Apples*.

Of choice of Winter Apples. In Planting *Winter-fruit*, the beſt courſe is to Plant ſeveral *Trees* of ſome few of the *beſt kinds*, after you have found what ſort proſper in your ſoil beſt; for many ſorts will be troubleſome in the gathering, and keeping them ſeverally when you have done.

Long laſting and *fair Apples* will adorn your *Table*, and yield moſt *profit*.

Of Cyder-fruit. For *Cyder-fruit* the *Redſtrake*, and *Brombery-Crab* have the general prehemineence, the laſt of which is not ready for grinding till almoſt *Chriſtmas*.

The *Gennet Moil* was once accounted the beſt, and ſtill many *Gentlemen* that

that are *Cyder-Maſters* prefer it, and preſerve it for their own drinking.

The *white* and *red Muſt-Apples* make a Cyder very *good*, to be drunk about *Chriſtmas* next following the ſeaſon of making *Cyder*. The Tree is of *quick* and *large growth*, a good *bearer*, and *twelve* or *fourteen* Buſhel or Strikes of them will make a *Hogſhead* of *Cyder*.

The *Winter Queening* is not commonly uſed for *Cyder*, yet it yields a *ſtrong* and *vinous Liquor*; but ſo *dry* a *fruit*, that near *twenty four* Buſhels will go to make one *Hogſhead*. The *fruit* muſt not be ground till very late in the year.

The *Golden Pippen* is ſaid to make an *admirable* and *reſtaurative Cyder*.

Pippens and *Pearmains* mixt, are much uſed, and *Pippens* alone, make a *ſtrong* and *wholeſome* Liquor.

Some are apt to object, That ſince *one* or *two* kinds of *Fruit* may be had very good for *Cyder*, what occaſion is there to Plant of ſo many ſorts? *Of planting ſeveral kinds.*

For anſwer, They will find it advantageous to have ſeveral ſorts of *Fruit* for *Cyder*, if they conſider,

1. One ſort of *Fruit-trees* may, and do bear one year, when another fails.

2. *Cyder* made of ſome kinds, will be

ready to drink ſooner than of others, and thereby you may have it ſucceſſively ready for your uſe. The *Muſt-Cyder* may be clear a month after making: The *Gennet Moil*, a quarter of a year after: The *Redſtrake*, near half a year after, though it's much improved by longer keeping.

3. You may make your *Cyder* with more eaſe, the *Fruits* you make it of ripening one after another.

4. Though ſome *Fruit* yield not ſo good *Cyder* as others; yet the Trees may be quicker of growth, bear more plentifully, and laſt longer than thoſe that yield better: And the *Palates* of men being various, ſome like one ſort, and ſome another, and ſo all may be pleaſed.

5. Some *Fruit-trees* agree with the *Soil* and *Climate* better than others, which you will not be able to know till you have made trial of ſeveral.

Of Quinces. *Sect.* 10. Of *Quinces* there are ſome ſorts, though not many, ſomewhat different from each other.

The *Portugal-Apple* and *Pear-Quince*, are held to be the beſt, and are the largeſt.

The *Barbary Quince* is good but ſmaller.

The

The *Lions* and *Brunſwick*, are alſo good Fruit.

The *Engliſh* is the moſt ſtony.

Sect. 11. There are ſeveral ſorts of *Walnuts*, ſome being *larger*, others *thinner ſhell'd* than the common, but differing ſo little one from another, that Men have not much minded giving them *names*. The largeſt ſort is uſually called the *French Walnut*. *Of Walnuts.*

The beſt *Cheſnuts* among us, are thoſe that come from beyond *Sea*; but of thoſe that grow with us, ſome are *larger* than others, without any difference worth obſervation. *Of Cheſnutts.*

There are two ſorts of *Filbeards*, diſtinguiſht by the colour of the skin of their *kernels*; the one being *red*, and the other *white*. *Of Filbeards.*

There is another ſort call'd the *Filbeard* of *Conſtantinople*; the *leaves* and *fruit* of which, are bigger than either of the former.

And there is beſides theſe an excellent large plump *Nut*, that hath a very good *kernel*, the beſt of which have a very thin *ſhell*.

Sect. 12. *Figs* are a Fruit that agree with *Engliſh Palates* and *Soils* much alike, there being few that affect them. Among *Of Figs.*

the ſeveral ſorts of them, there are *two* of chiefeſt note among us. The great *Blew Fig* which is moſt common, and the *Dwarf blew Fig*, that is ſooner ripe, and better taſted.

Of Medlars. There are three or four ſorts of *Medlars*, the biggeſt ſort is beſt, without any *thorns* upon the branches, as the common hath: There is another kind alſo without *ſtones* in the *Fruit*.

Of Services. There are two ſorts of *Services*, one larger than the other, that groweth wild in the *wood*; but neither the ſorts of theſe, nor of *Medlars* are diſtinguiſhed by *Names*, and the *fruit* of both is not eatable till they are *rotten*.

Of Mulberries. *Sect.* 13. *Mulberries* are diſtinguiſht by their *colours*, for there are *black*, *red*, and *white*.

Of Gooſberries. There is ſome variety in *Gooſberries* likewiſe; the beſt ſorts are the *Amber*, and great *Hedghog Gooſberry*, which is *prickly*, but the other *ſmooth*, both of a *bright*, *yellow colour*, and the *white Holland Gooſberry* which is *large* and *tranſparent*; there are likewiſe ſome that are of a *blew*, others of a *red*, and others of a *green colour*.

Of Currans. The *white* and *red Currans* of the largeſt ſize, are the beſt ſorts of that kind of *Fruit*;

Fruit; the great *dark-red Dutch-Curran* is largeſt, and hath a ſweet reliſh; ſome perſons affect the *common black Curran.*

There's ſcarcely any other difference found among *Rasberries*, but that ſome are *red*, and ſome *white.* *Of Raſberries.*

And the like difference is to be found among *Barberries*, but ſome are without *Stones.* *Of Barberries.*

CHAP.

CHAP. XV.

Of Gathering Fruit, and making ſeveral ſorts of liquors of them.

Hurt not the Trees.

SECT. 1. In gathering of *Fruit*, be careful the *branches* of your Trees be not battered and broken.

How to gather Fruit for keeping.

Such as you deſign to keep any time, ought not to be *ſhaked* off the *Trees* becauſe of bruiſing; but picked off with your hands. Be ſure the Fruit you gather be throughly *ripe*; which you may know by its beginning to *drop*, or the *kernels* turning *black*: Let the *weather* be *fair* and *dry* when you gather, and no *dew* upon the Trees. Lay up what you thus gather in a *cloſe*, but *ſweet room*, upon a *boarded-floor*, without any green *leaves*, or *ſticks* among them.

Of preſerving.

If you have ſome *Pears*, that are *choice* and *laſting*, wrap them up in *Paper*, and lay them one by one upon a *ſhelf*, or hang them up by the *ſtalks*, and keep out the *air* from them as much as you can.

As you find any in your heaps *rot*, pick them out; and in a ſharp *Froſt*, cover

cover them with a *Straw Mat.*

In gathering *Cyder Fruit* you muſt be ſure to let them be well *ripe*, then let them be gently *ſhaken* down, and laid upon a *ſweet* and *dry floor*, in a heap, and there lye a *fortnight.* The *Red-ſtrake*, and harder *Apples* you may let lye longer, (that is) *three weeks* or a *month*; the longer they lye, the leſs *Cyder* indeed they will yield, but much the better, it being neceſſary to have them as *ripe* as may be, ſo that too many of them begin not to *rot*; ſome are for picking out the *rotten* ones before you grind them; others ſay a few *rotten Apples* do no hurt, but rather good, in helping the *liquor* to *ferment.*

Sect. 2. And becauſe I am here ſpeaking of gathering *Fruit*, I ſhall give you the deſcription of a *Ladder*, convenient to be uſed both in *getting* the *fruit* off *young trees*, and *pruning* them, they not being ſtrong enough to bear an ordinary *Ladder* without harm. *Of a Ladder.*

Take a Board like the *head* of a *joint-ſtool*, but thicker; let there be join'd to it a *Ladder* (of what length you judge convenient, having reſpect to the height of your Trees) with ſuch Irons as it may ply to and fro, and at the other end,

end, let two feet of equal length with the *Ladder*, be put in ſo as they may ſtand wider at the bottom than the top. *See the Figure.*

Of an Engine, or Mill for grinding fruit.

Sect. 3. Of many ſorts of Fruits may be made very noble and delicious liquors for drinking, by ſeparating the juice from the feculent parts of them, which is performed by Pounding, or Grinding them, by ſuch inſtruments as were to be had: But lately hath been found out an Engine, incomparably more commodious for this work, than any thing ever known before; many of which are already diſperſed throughout the Kingdom, made according to the firſt model: But they have lately received ſo vaſt an improvement, that they ſeem now quite another Invention, and to want nothing to their perfection. The Inventor had a Patent for them, the property of which is now in one Mr. *Henry Allen*, at the ſign of the *Cabinet* in *Exeter-ſtreet*, on the back of *Exeter-Change* in the *Strand* in *London*, who makes them himſelf, and licenſes any Artiſts in the Country, to do the ſame upon reaſonable terms. Any that are near *London* may have the Engine with the Frame, thoſe that live more remote, may

may have the Engine alone, with directions how to make the frame. The price of this Mill is from 4l. to 10l. according as it is in bigneſs, or for curioſity of work. The excellencies of it are, That it takes up ſo little room, no more than two yards ſquare: It grindes according to the bigneſs of it, from 50 to 20 Buſhel an hour, with the labour only of one man, the feeding of it now being contrived with a little aſſiſtance of another. It performs the work better than any thing elſe. And laſtly, It grindes all manner of Fruit with a little alteration in ſetting of it.

Sect. 4. Other *Authors* have given directions about making *liquors*, of ſeveral ſorts of *Fruit*; but that he that hath this Book may not be troubled to ſeek for them any where elſe, and becauſe I can truly pretend to exactneſs in this particular, no leſs than (I believe) I have juſtly done in all that went before; and withal having guided the Reader in the way to get choice *Fruit*, before I take leave with him, I ſhall in the laſt place, inſtruct him how to order it, and how to make uſe of it.

In grinding, or pounding and preſſing their *Fruit*, every one may be ſafely *Of making Cyder.*

left

left to the cuſtom or convenience of his Country, but the management of the *liquor* after it is preſſed out is of great importance; Thus therefore you muſt proceed, When your *Apples* are *ground*, or *pounded* ſufficiently, and the *liquor* preſt forth, ſtrain it immediately through a *ſieve*, and tun it up in a Hogſhead or Barrel, ſeaſoned and ſweet; fill it not up by two *gallons* at leaſt, and ſtop it up only with a looſe *ſtopper* for *two* or *three* days, and then ſtop it up cloſe with *clay* on the *top*, and put a *cork*, or ſome *ſtopper* in the *vent* hole; but for a weeks time or more, you may once a day draw it forth a little, leſt it break the veſſel, or force ſome other *vent*; then ſtop it cloſe up alſo, and ſo let it ſtand till you think it may be ſomething *clear*, and then pierce it to try how it fines; the *Summer Fruit* after a *Month*, the *Moil* after the firſt *Froſts*, the *Redſtrake* not till after *January*; other *Winter-fruit Cyder* about the ſame time.

Of fining Cyder by racking.

If your *Cyder* be not *fine* at the times aforementioned, try them again about a *month* after; and then if it be not fine, rack it off, as you would do *Wine*, ſetting another *veſſel* in a convenient place, that

that through a *pipe* of *Leather*, or a *Siphon*, or *Crane* of ſome *metal* or *glaſs* the *liquor* may run out of the one into the other without being expoſed to the *air*, which is a moſt material thing to take care of at the firſt preſſing, and at all times; the ſpirits of *Cyder* being very apt to *evaporate*.

Some chooſe rather to fine their *Cyder* with *Water-glew* commonly call'd *Izinglaſs*, than by racking it, which is thus done. For a *Hogſhead* take about a quarter of a pound of *Izinglaſs* (and ſo proportionably for a greater or leſſer quantity) beat it thin upon an *Anvil*, or an *Iron-wedg* or ſuch like thing, cut it in ſmall pieces and lay it in ſteep in a quart of *White Wine*, or ſome of the *liquor* you would fine, ſo it be not ſharp, but it diſſolves beſt in *white Wine*, let it lye therein all night, the next day keep it ſome time over a gentle fire, till you find it well diſſolv'd; then take a greater proportion of the *liquor* you intend to purify, after the proportion of one *gallon* to a *Hogſhead*, in which boil the diſſolved *Izinglaſs*, and caſt it in the whole maſs of *liquor*, ſtirring it well about and leave the vent-hole for ſometime open: This will fine any kind of Liquor. *With Izinglaſs.*

But

But the common and beſt way is that among *Vintners*, *&c.* that have frequent uſe for it: And it is to diſſolve a conſiderable quantity of *Izinglaſs* in *White Wine* without putting it on the fire, which it will do in about a months time and turn to a *jelly*, which they keep by them, and it will keep good a twelve-month, and when they have occaſion to uſe it remove the ſcum that will be on the top of it, and take what quantity will ſerve their turn out of it according to the proportion of a *quart* to a *Hog-ſhead*; and this they beat to a froth, and mix it with a quantity of the *Liquor* it's to be put in, and then pour it into the *veſſel* mixing it well together with a broom, and ſo leaving the work.

When it is very *fine* either draw it out of the *Veſſel* as you drink it, or which is better *bottle* it; and take notice, after it is *fine*, the ſooner you draw it off the better.

New Veſſel. If the *veſſel* you put it in be new, ſcald it with *hot water*, in which ſome of the *Muſt* or *Pouz* hath been boil'd.

Tainted Veſſel. If it be tainted take ſome unſlact *Lime* and put it in the *veſſel* with water, and *ſtopping* it well, *roll* it about a while.

Wine

Wine Casks, if ſweet, are accounted proper to receive this *liquor*. *Wine Casks.*

If any one ſhall deſire a ſmall quantity of *Cyder* extraordinary for its goodneſs, let him take the *liquor* that comes firſt from the *Muſt*, without much preſſing, and diſpoſe of what comes afterwards by it ſelf, or mix it with the juice of another grinding. *Choice Cyder.*

Some have been ſo curious as to pick off the *trees* the ripeſt *Apples*, and eſpecially thoſe that have had moſt of the *Sun*, and to make uſe of them by themſelves for choice Cyder.

Sect. 5. *Perry* is made the very ſame way as *Cyder*, only obſerve to let your *Pears* be very *ripe* before you grind them. And it's a thing adviſed by ſome, to mix *Crabs* among the *Pears* of weakeſt *juice* to mend the *liquor*. *Of Perry.*

Sect. 6. If you have plenty of *Rasberries* they will make delicious Wine, after this manner. *Of Rasberry Wine.*

To every two *quarts* of *Rasberries*, put one *pound* of *fine white Sugar*; let them ſtand *two* days in an *earthen pot*, often ſtirring and bruiſing them; then put them in a *woollen bag* and hang them up, that the *liquor* may drop out into a *Milk-pan*, or ſuch like thing, for *twenty-*

four hours, or more: put then the *liquor* into an *Earthen Pot*, with a *Faucet* in it, let it ferment there and ſcum it off, at a weeks end or ſooner (if it be any whit fine) bottle it up, and at another weeks end, ſhift it into freſh *bottles*, reſerving the *ſetlings* in the *bottom* of the *bottles*, which you may after put together into one *bottle* by it ſelf; ſhift the *bottles* thus *twice* or *thrice*, as long as you ſee any ſettlement in them.

Currin Wint.

Sect. 7. Of *Currans* alſo you may make a delicate *Wine* thus: Gather the *Currans* very *ripe*, bruiſe and ſtrain them; to every two quarts of the *juice* put one *pound* and a *quarter* of *Sugar*, put it into an *Earthen Pot*, ſcum it oft, and at a weeks end *draw* it off, take out the ſetling, put it in the *Steam-pot* again; do this *twice* or thrice till it be very *fine*, and *bottle* it; if you find it not fine in the *bottles* at a weeks end, ſhift it into other Bottles.

Goosberry Wint.

Sect. 8. To make *Goosberry Wine*: Gather the *fruit* before they are too *ripe*, and for every *ſix pound* of *Goosberries*, take *two pound* of *Sugar*, and *two quarts* of *water*, ſtamp the *Goosberries*, and ſteep them in the *Water* and *Sugar* twenty-four hours, ſtrain them, and put the *li-*

quor

quor into a *veſſel* cloſe ſtopt for a fortnight or three weeks: Draw it off if you find it *fine*, if not, let it ſtand a fortnight longer, and then draw it into *Bottles*; but if it be not then fine, Rack it, or uſe Izinglaſs.

Delicate *Wines* are made theſe ways upon *Experience*; but if you deſire to make a greater quantity of *liquor* of your *Fruit*, you may either for *Rasberry*, *Curran*, or *Goosberry Wine* add more *water*, and make them after this manner.

Sect. 9. For every *pound* of ripe *Fruit* ſtampt, take a *quart* of *ſpring water*, and a *quarter* of a *pound* of fine white *Sugar*, boil the *Water* and *Sugar*, *ſcum* it and put in the *juice* of your *Fruit*, let it *boil* up again, take it off the *fire*, run it through a *hair ſieve*, and when it's throughly cold put it in a *Stean-pot* or *Veſſel*, after *ſix* or *ſeven days* draw it out into *Bottles*, put into each *Bottle* the quantity of a *Nutmeg* of loaf *Sugar*. It will not be fit to drink under a *quarter* of a *years* time and will keep good a *year*. *Another way.*

According to this laſt direction you may alſo make *Cherry Wine*, or to make it ſtronger, uſe no more *water* than *juice* of the *Cherries*.

Sect. 10. *Cherry Brandy* is uſually made *Cherry Brandy.*

made with *black Cherries*, by filling a bottle half full of *Cherries*, and putting in *Brandy* till the *bottle* is near full; ſhake it ſometimes; within a month it will be ready to drink.

If you put the like quantity of *Gooſberries* inſtead of *Cherries*, it will make the *Brandy* very delicious.

The Concluſion.

Reader, I have no more (and I am pretty well aſſured there's little more neceſſary) to ſay to thee as a *Planter*; but when thou goeſt to work by theſe directions, then as a *good Chriſtian* obſerve the Characters of the Divine *wiſdom*, *power* and *goodneſs*, that thou ſhalt every where meet with in this ingenious and beneficial Employment, and chiefly take notice how all ends in that which ſerves only for thy own uſe and pleaſure; therefore *praiſe* and *adore* him, and *obſerve* his bounds in the Enjoyment: And in ſo doing thou maiſt have the benefit of, and I'll take my leave of thee in, the words of him that ſpake of Trees, *From the Cedar tree that is in Lebanon, even unto the Hyſſop that ſpringeth out of the wall. Go thy way, eat thy bread with joy, and drink thy wine with a merry heart; for God now accepteth thy works*, Eccl. 9.7.

THE END.

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